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FIRE ECOLOGY ??? QUESTIONS SURVEY

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FIRE ECOLOGY QUESTIONS SURVEY:

CANDID EXPRESSIONS OF RESEARCH NEEDS BY LAND MANAGERS AND SCIENTISTS IN WESTERN NORTH AMERICA

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ABSTRACT

Contains 910 sets of forest fire ecology questions mailed to the authors by 302 land managers and scientists throughout the western United States and western Canada. Questions were submitted in response to a survey of important research needs for understanding the effects of fire and fire exclusion in western coniferous forest ecosystems. The questions cover the entire spectrum of environmental parameters affecting and affected by fire, and present, collectively, a compendium of candidly expressed research needs. A geographical source code and a topical keyword index permit selective searching of the question sets.

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KEYWORDS: fire ecology; fire effects; fire exclusion; fire research planning.

INTRODUCTION

Fire interacts with all environmental parameters in coniferous forest ecosystems. It exerts direct control on succession, setting it back to earlier stages, perpetuating subcycles, or in some cases setting it ahead. Fire is thus related to forest community structure and composition. It is also related to the rate at which trees grow, their condition, vigor, and resistance to insects and disease, their reproduction cycles and success, and their distribution. Energy, moisture, and nutrient systems are also related to fire, as are micro-organisms, soil-building factors, wildlife population dynamics, and hydrologic functions.

Recognizing the pervasive influence of fire, and citing the need for fuller understanding of fire's role in coniferous forests, the Directorate of the US/IBP Coniferous Forest Biome established the Fire Ecology Project in 1973 at the University of Montana, in Missoula.

The project, a cooperative effort among the Coniferous Forest Biome, the University of Montana, and the Intermountain Forest and Range Experiment Station, has as its objective the production of a problem analysis on the natural role of fire and its effects in western North American coniferous forests. The problem analysis will provide the basis for constructing systems-oriented computer simulation models directed toward solving the problems delineated. This report describes the first stage of our problem analysis development, a questions survey conducted by mail.

THE QUESTIONS SURVEY

Ecological systems modeling should be motivated by a set of explicit questions about the system.[1] Because it is vital to identify the most important questions to use limited research resources most efficiently, we decided to ask land managers and environmental scientists what they thought were the most pressing needs for understanding fire's role and its effects. In July 1973, we initiated a survey of 805 land managers and scientists throughout the western United States and western Canada. After selecting prospective respondents, we simply sent them letters of explanation and asked them to return written questions about fire and fire effects. We received almost 2,000 questions from the 411 respondents to the survey. The 910 question sets from 302 respondents listed here were compiled by combining closely related responses, and eliminating duplicates and a few irrelevant responses. The respondents were divided about equally between land managers and scientists.

Our procedure for selecting prospective respondents was designed to elicit opinions from the broadest possible spectra of land managers and environmental scientists with respect to geographic location, interest, and agency or institutional affiliation. It was not our intent to determine *the* most important fire ecology question. To the contrary, our purpose was to gain the broadest possible base of important questions. In general, we selected potential management respondents from private forest industry firms and public land management agencies. Potential scientist respondents were from academic institutions and Federal Government research laboratories.

For most land management employment categories, we arbitrarily selected 2 to 14 land managers per State or Province. For example, we decided to contact six State fish and game managers per State. The widest possible geographic distribution among six of the agency's field locations in each State was then sought, and the supervisory manager was selected in each of the locations. With few exceptions, the 448 land managers selected for the survey were unknown to the authors. The only employment category in which truly random selection of managers could be used and still insure wide geographic coverage was the U.S. Forest Service. With this agency, because of the large number of managers to choose from, two district forest rangers were selected at random from each of 93 National Forests. Table 1 shows the distribution of all prospective manager respondents by employment category, and by State or Province.

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[1]D. W. Goodall. Integration of shrub research effort, p. 435-439 in Wildland shrubs-their biology and utilization. USDA For. Serv., Gen. Tech. Rep. INT-1. 1972.

Table 1.--*Numbers of prospective respondents among land managers in 13 western States, 2 Canadian Provinces, and 1 Canadian Territory, by employment category and location*

State	State Forest Land Managers	Forest Service District Rangers	Private industry Forest Managers	Fish and Wildlife Service Refuge Managers	State Fish & Game Managers	BLM District Managers	BIA Area Foresters	Total
UNITED STATES								
Alaska	2	4	3	1	6	2	0	18
Arizona	2	15	3	0	6	1	2	29
California	3	30	5	3	6	2	4	53
Colorado	0	20	2	2	8	2	1	35
Idaho	2	23	5	3	6	2	0	41
Montana	2	19	6	2	6	2	4	41
New Mexico	3	15	4	1	6	2	2	33
Nevada	0	3	0	1	5	2	0	11
Oregon	3	19	5	2	6	3	1	39
South Dakota	2	3	1	0	3	0	0	9
Utah	0	12	0	1	6	3	0	22
Washington	3	14	5	5	6	1	3	37
Wyoming	2	9	0	1	6	2	0	20
	24	186	39	22	76	24	17	388

Province or Territory	Provincial Fish and Wildlife Managers	Private industry	Provincial Territorial Foresters	Total
CANADA				
Alberta	11	3	14	28
British Columbia	14	6	11	31
Yukon Territory	0	0	1	1
	25	9	26	60

Because scientists are typically grouped in laboratories and not widely distributed across any given geographic area, the emphasis of our scientist selection criteria was on research subject diversity. We wanted fire ecology questions from the most diverse environmental science audience possible.

We included scientists from widely separated government and academic research facilities throughout the study area (giving fairly wide geographic distribution), and purposely selected scientists whose research specialties and interests, collectively, covered the full range of environmental parameters affected by fire. Many of the

scientists were known to us through their publications or previous correspondence. The distribution of scientists by State or Province and by employment category is shown in table 2. The few scientists located well outside the study area are individuals known by reputation to have fire research interests and experience with western coniferous forests.

Table 2.--*Numbers of prospective respondents among scientists in 17 States and 6 Canadian Provinces, by employment category and location*

State	Academic research	Forest Service research	Fish and Wildlife Service research	National Park Service research	Miscellaneous research	Total
UNITED STATES						
Alaska	3	9	2	0	0	14
Arizona	9	13	4	1	3	30
California	8	7	8	5	0	28
Colorado	13	6	15	1	0	35
Hawaii	1	0	0	0	0	1
Idaho	6	8	7	0	0	21
Michigan	2	0	0	0	0	2
Montana	25	23	6	1	0	55
New Mexico	1	1	2	0	0	4
Nevada	3	1	0	0	0	4
Oregon	10	9	10	0	0	29
South Dakota	1	3	0	0	0	4
Texas	1	0	0	0	0	1
Utah	6	9	11	0	0	26
Washington	16	4	8	1	0	29
Wyoming	0	1	2	4	0	7
Wash., D.C.	0	1	0	0	0	1
	105	95	75	13	3	291

Province	Academic research	Forestry Service research	Wildlife Service research	Total
CANADA				
Alberta	10	9	16	35
British Columbia	12	10	2	24
New Brunswick	1	0	0	1
Ontario	0	3	1	4
Quebec	1	0	0	1
Saskatchewan	1	0	0	1
	25	22	19	66

Following final selection of the 805 prospective respondents, each was assigned a response code number, and was thereafter known to us only by that number and by State/Province and vocation (scientist or land manager) code. Only the project secretary knew both an individual's name and code number. Thus, each respondent and his agency or employer were assured of anonymity. None of the question sets in this report are attributable to specific individuals or agencies.

Our letters to prospective respondents asked that they submit questions dealing only with the biological-physical role and effects of fire and fire exclusion, but some responses dealt with other aspects of fire management. These responses, and some generated by the authors, are included in this preponderantly ecologic effects report. The question sets have been subjected to minimal editing to preserve the general style, flavor, and candidness of the original responses.

HOW TO USE THIS REPORT

The question sets are identified and grouped only by State or Province, and are numbered consecutively from 1 to 910. The example below illustrates the format:

172. 02 130. WHAT ARE THE DIFFERENCES IN LITTER AND ACCUMULATION RATES (BY KIND OF LITTER MATERIAL) BETWEEN BURNED-OVER SITES AND AREAS FROM WHICH FIRE WAS EXCLUDED? WHAT SPECIFIC DECOMPOSER ORGANISMS ARE INVOLVED? HOW DO THE DIFFERENCES IN RATES CHANGE WITH HABITAT TYPE, SPECIES COMPOSITION, STAND AGE, DENSITY, ETC.? HOW DOES FERTILIZATION (ESPECIALLY WITH N AND Ca) AFFECT LITTER ACCUMULATION RATES (BY KIND OF LITTER MATERIAL) BETWEEN BURNED-OVER SITES AND AREAS FROM WHICH FIRE WAS EXCLUDED? WHAT SPECIFIC DECOMPOSER ORGANISMS ARE INVOLVED? HOW DO THE DIFFERENCES IN RATES CHANGE WITH HABITAT TYPE, SPECIES COMPOSITION, STAND AGE, DENSITY, ETC.? HOW DOES FERTILIZATION (ESPECIALLY WITH N AND Ca) AFFECT LITTER ACCUMULATION (NET) UNDER UNDISTURBED STANDS? MANIPULATION COMPARISON, FIRE EXCLUSION, LITTER DECOMPOSITION, FUEL-BIOMASS ACCUMULATION, MICROORGANISMS, SPECIES DIVERSITY, DENSITY, AGE, NUTRIENTS.

The number in the left margin is the set number (1 to 910). The middle two-digit number is the State/Province code (see tabulation). The three-digit respondent code, located to the right of the State/Province code, is the same for all question sets submitted by an individual respondent. Thus, the three sets in this report bearing respondent code 130 were submitted by one respondent in Idaho. The respondent codes are given here only to show the continuity that sometimes exists between two or more question sets from a given respondent. The sets having State/Province code "ØØ" and respondent code"ØØØ" originated either in the project office or in locations outside the western States and Provinces shown in the tabulations. In the example, the 10 terms following the last question mark are descriptors, or keywords, that characterize the question set and correspond to the keywords in the Index and Vocabulary. Appropriate keywords are appended to all of the question sets in the report.

Geographic Searching

To find the group of question sets from a particular State or Province, simply find its two-digit code below, then turn to the appropriate section of the report. All of the question sets are listed in increasing order of the State/Province code numbers.

Location	*Code*	*Location*	*Code*
Project Office	00	Nevada	08
Washington	01	Utah	09
Idaho	02	Colorado	10
Montana	03	Arizona	11
South Dakota	04	New Mexico	12
Oregon	05	Alaska	13
Wyoming	06	British Columbia	14
California	07	Alberta	15
		Ontario	17

Topical Searching

The question-set list is followed by a keyword vocabulary list and a keyword index. To use the report for topical searching, one should look in the vocabulary section for the desired keywords and then consult the Index for all question-set numbers listed under the selected keywords, and flip through the body of the report until the desired question sets are located. The keywords "experiment oriented question" indicate the authors' belief that the question is especially oriented to field or laboratory experiments.

COMMENTS

The primary purpose of the Questions Survey was to provide a broad input base to our problem analysis. In the second stage of the problem analysis, to be reported elsewhere, we're using the questions in another way. The responses are synthesized into fire ecology problem areas and ranked as to their research importance by two panels of expert land managers and scientists by the Delphi method.[2] Perhaps the greatest value of the responses is through sharing them with other land managers, administrators, environmental scientists, students, and the general public. We believe the question sets collectively express the most important needs for understanding the ecologic effects of fire.

The reader who is familiar with the literature will recognize that answers to some of the questions do not really require more field research because a considerable body of literature already exists. Here we have a case of poor information diffusion from research to on-the-ground ecosystem managers. In other cases, the questions require information discovery since very little literature exists. Here, discovery may require fieldwork with concurrent simulation modeling to guide and integrate the field research inquiries.

The practicing land manager may note striking similarities among question sets from different geographical areas, suggesting that only a handful of basic principles--modified by climate, species, and geographic factors--are at work. The administrator may wish to compare specific problems among land managers throughout his area of interest. The senior or graduate student in resource management or environmental research programs will find among these question sets many real-world problems worthy of earnest effort.

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[2]J. Pill. The Delphi method: substance, context, a critique and an annotated bibliography. J. Econ. and Soc. Plann. Sci., 5:5771. 1971.

Many of the question sets are oriented toward fire ecology as a basic ecological science, while others are oriented toward using fire as a management tool to control some specific biological organism or process. A large number of the respondents identified information needs from an organism orientation; few focused directly on ecological principles. Still fewer focused directly on natural fire in a community-ecosystem behavior context. This is particularly evident in the question sets on animal organisms, compared to the virtual absence of inquiries on fire effects in food web structure and dynamics in coniferous forest seres.

We suggest that environmental scientists can benefit by studying these research needs with the "mirror" concept in mind. With this concept, each scientist should read the expressed needs for information, understanding, and prediction ability, from the perspective of his own particular specialty. He should then be able to "read between the lines" to see what the solution of any given need would require from his environmental specialty. Using the "mirror" concept and "questioning" should be an ongoing, daily activity for every scientist so that his investigations are problem-centered and don't become means-centered.[3] Even though seeking the best questions to ask is an infinite activity, a systematic logging and analysis of research needs must begin somewhere. This list is a beginning--a "snapshot in time," possessing questions of variable quality. We hope it will be both useful and stimulating to those doing research in the broad spectrum of fields relating to fire ecology.

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[3]A. H. Maslow. Motivation and personality. Chap. 2, *in*: Problem centering vs. means centering in science. Harper and Row, New York. 1970.

QUESTION SETS

1. 00 000 CONSIDERING PIONEER PLANT SPECIES, WHOSE SEED DISPERSAL RANGE IS LIMITED BY WIND, CAN CHANGES IN THE AREAL EXTENT OF CROWN BURNS AFFECT THE RATE OF SECONDARY SUCCESSION THROUGHOUT THE BURNED AREA? SEED,DISPERSION,SUCCESSION,MOSAIC,CROWN BURN

2. 00 000 DO DIFFERENT CONCENTRATIONS OF WOOD SMOKE FROM VARIOUS GRASS, SHRUB, TREE, OR DUFF TYPES HAVE AN ALTERING EFFECT ON THE LIGHT SATURATION LEVEL FOR PHOTOSYNTHESIS IN DIFFERENT TREE SPECIES? SMOKE EFFECTS,ORGAN,PRODUCTIVITY,EXPERIMENT ORIENTED QUESTION

3. 00 000 DO VARIOUS CONSTITUENTS OF WOOD SMOKE EVER INTERFERE WITH THE PHYSIOLOGIC RESPONSE OF GUARD CELLS CONTROLLING STOMATE BEHAVIOR ON ANY TREE SPECIES IN WESTERN CONIFEROUS FORESTS? SMOKE EFFECTS,ORGAN,PRODUCTIVITY,EXPERIMENT ORIENTED QUESTION

4. 00 000 DOES THE DEGREE OF IONIZATION (+ OR -) OF GROUND-LEVEL AIR HAVE ANY EFFECT ON THE ACTIVITY PATTERNS OF SPRUCE BUDWORM, DOUGLAS-FIR TUSSOCK MOTH, OR PINE BARK BEETLE?--ASIDE FROM REVERSED ELECTRICAL FIELDS WITH THE PASSAGE OF A THUNDERSTORM, DOES WOOD SMOKE CONCENTRATION INFLUENCE THE DEGREE OF IONIZATION OF THE GROUND-LEVEL AIR? SMOKE EFFECTS,INSECT,EXPERIMENT ORIENTED QUESTION

5. 00 000 DOES WOOD SMOKE CONCENTRATION AND DEPOSITION ON THE NESTS OF ANY SPECIES OF BIRDS HAVE AN INFLUENCE ON THAT BIRD SPECIES' SUBSEQUENT BEHAVIOR WITH REGARD TO THE NEST? (ASSUME NO FIRE AROUND THE NEST AREA,---ONLY ADVECTED WOOD SMOKE.) SMOKE EFFECTS,BIRD,ORGANISM,EXPERIMENT ORIENTED QUESTION

6. 00 000 HOW DO YOU MANAGE FIRE TO AFFECT BEAR FOOD RESOURCES? WOULD THIS CHANGE THE BEAR POPULATION ANYWAY? GAME ANIMAL,HERBIVORY,POPULATION

7. 00 000 HOW DO YOU MANAGE TO MAXIMIZE AESTHETIC DIVERSITY OF FOREST-FLOOR HERBS? (AESTHETIC DIVERSITY DEFINED AS SCATTER IN A SPACE WITH THREE DIMENSIONS REPRESENTING FLOWER COLOR SPECTRUM, FLOWER HEIGHT, AND FLOWERING DATE.) (I SUGGEST YOU TAKE THE "SMALL WATERSHED", <1000 ACRES, AS THE SPATIAL UNIT.) AESTHETICS

8. 00 000 HOW MUCH RAIN IS NECESSARY TO RINSE ALL CHEMICAL FIRE RETARDANT OUT OF THE CROWN OF CONIFERS IN VARIOUS SIZE CLASSES? CHEMICAL RETARDANT EFFECTS,HYDROLOGY,CROWN,ORGAN,EXPERIMENT ORIENTED QUESTION

9. 00 000 IS IT POSSIBLE THAT WITH NATURAL FIRE FREQUENCY THE FUEL LOADS AWAY FROM THE STREAM WERE KEPT RELATIVELY LOW, SUCH THAT INTENSITIES OF FIRES WERE NOT USUALLY

GREAT ENOUGH TO IGNITE THE STREAM BANK VEGETATION? --BUT WITH FIRE EXCLUSION, INCREASED FUEL LOADS WILL LEAD TO GREATER INTENSITIES OF FIRE, WHENEVER IT DOES OCCUR, SUCH THAT THE INTENSITY WILL EXCEED A THRESHOLD VALUE NECESSARY TO IGNITE RIPARIAN VEGETATION AND THEREBY REMOVE THE STREAM COVER? FIRE FREQUENCY,FIRE BEHAVIOR,STREAM,FUEL/BIOMASS ACCUMULATION,POPULATION

10. 00 000 IT IS OFTEN HELD THAT FIRE INCREASES THE CONCENTRATION OF AVAILABLE NUTRIENTS IN THE SURFACE SOIL. IS THIS EFFECT MORE MARKED IN HARDWOODS THAN SOFTWOODS, AND IS IT ALSO MORE PRONOUNCED ON HIGH BASE STATUS SOILS THAN ON LOW BASE STATUS SOILS? NUTRIENTS,SOIL

11. 00 000 UNDER WHAT CIRCUMSTANCES WOULD A SINGLE FIRE, OR OTHER PERTURBATION SUCH AS NUTRIENT ENRICHMENT, CHANGE THE CLIMAX ON A PARTICULAR SITE? (YOU MIGHT CONSIDER THIS IN TWO PARTS: FIRST, WHAT SITE VARIABLE MUST YOU KNOW TO PREDICT CLIMAX IN THE ABSENCE OF FIRE; SECOND, WHICH OF THESE COULD BE PERMANENTLY CHANGED BY A SINGLE PERTURBATION OF THE RIGHT KIND?) ECOSYSTEM,SUCCESSION

12. 00 000 UNDER WHAT CONDITIONS COULD FIRE SUPPRESSION ON FORESTED SLOPES ACCELERATE AQUATIC SUCCESSION IN ADJACENT LOWLAND WATER BODIES, AND SUBSEQUENTLY ELIMINATE WATERFOWL HABITATS? FIRE EXCLUSION,TOPOGRAPHY,AQUATIC,SUCCESSION,BIRD,ECOSYSTEM

13. 00 000 UNDER WHAT CONDITIONS MIGHT THE BASES OF SNAGS ACT AS REFUGIA FOR THE PIONEER FORBS, BECAUSE OF INCREASED SOIL MOISTURE FROM SNAG INTERCEPTION AND STEM FLOW? SNAG,ECOSYSTEM,SOIL-WATER RELATIONS,MICROCLIMATE,CROWN BURN

14. 00 000 WHAT COULD BE THE EFFECT OF CHANGES IN THE QUANTITY OF CHARCOAL ON THE SOIL SURFACE, AS SEEN IN THE GERMINATION AND SEEDLING SURVIVAL OF DOUGLAS-FIR? CHARCOAL,MICROCLIMATE,ORGANISM,REPRODUCTION

15. 00 000 WHAT COULD BE THE EFFECT OF CHANGING THE PROPORTION AND POSITION OF CROWN BURNS IN A WATERSHED, AS SEEN IN THE DEPTH OF THE NOCTURNAL INVERSIONS IN THE TRIBUTARIES AND THE VELOCITY OF THE NOCTURNAL CANYON WIND OUT OF THE WATERSHED? MOSAIC,MORTALITY,MICROCLIMATE,CROWN BURN

16. 00 000 WHAT EVIDENCE IS THERE TO INDICATE THAT IRON MOBILIZATION HAS BEEN INCREASED AS THE RESULT OF INTENSE FOREST FIRES IN HUMID FOREST AREAS? SOIL,ELEMENTS,FIRE BEHAVIOR

17. 00 000 WHAT IS THE EFFECT OF COVERING VARIOUS TREE SPECIES WITH FIRE RETARDANT (AMMONIUM PHOSPHATE?) AS SEEN IN THE PHOTOSYNTHESIS RATE OF THE TREE'S CROWN AS A UNIT? CHEMICAL RETARDANT EFFECTS, CROWN,PRODUCTIVITY,ORGAN,EXPERIMENT ORIENTED QUESTION

18. 00 000 WHAT IS THE EFFECT OF RUNOFF, HEAVY WITH NUTRIENTS, FROM A BURN INTO A HIGH MOUNTAIN LAKE, AS OBSERVED IN THE FISH POPULATION AND OTHER AQUATIC LIFE IN THE LAKE? NUTRIENTS,LAKE,FISH,POPULATION

19. 00 000 WHAT MIGHT BE THE EFFECT OF A CHANGE IN SNAG DENSITY AS SEEN IN THE MAXIMUM GROUND-SURFACE INTERFACE TEMPERATURE IN POST-CROWN FIRE ENVIRONMENT? SNAG,MICROCLIMATE,CROWN BURN

20. 00 000 WHAT MIGHT BE THE EFFECT OF CHANGES IN LITTER ACCUMULATION AS SEEN IN RODENT SEED CACHING PATTERNS AND THE REGENERATION OF SHRUBS? FUEL/BIOMASS ACCUMULATION,FIRE EXCLUSION,LITTER,SEED,SMALL MAMMAL,POPULATION,SHRUBLAND,REPRODUCTION

21. 00 000 WHAT MIGHT BE THE EFFECT OF CHANGES IN THE INTENSITY OF A FIRE, AS OBSERVED IN THE DENSITY OF VIABLE SEEDS IN THE SOIL AND THE DENSITY OF SOIL ARTHROPODS, ESPECIALLY CARABIDS? FIRE BEHAVIOR,SEED,ARTHROPODS,POPULATION,SOIL

22. 00 000 WHAT MIGHT BE THE EFFECT OF CHANGING FIRE FREQUENCY AND INTENSITY, AS SEEN IN THE FUEL LOAD ON A SITE? UNDER WHAT CONDITIONS CAN FIRES CAUSE AN INCREASE IN FUEL LOADS? FUEL/BIOMASS ACCUMULATION,REPRODUCTION,MORTALITY,DECOMPOSITION,SUCCESSION,FIRE FREQUENCY,FIRE BEHAVIOR

23. 00 000 WHAT MIGHT BE THE EFFECT OF FIRE EXCLUSION ON INSECT POPULATION DYNAMICS, WHOSE REPRODUCTIVE ACTIVITIES ARE TRIGGERED BY FIRE EVENTS? FIRE EXCLUSION, INSECT,POPULATION,REPRODUCTION

24. 00 000 WHAT MIGHT BE THE EFFECT OF INCREASING THE LITTER AND DUFF LAYER THICKNESS BENEATH A PONDEROSA PINE CANOPY, AS SEEN IN THE MOISTURE REGIMEN IN THE UNDERLYING MINERAL SOIL? IS IT POSSIBLE FOR THE LITTER LAYER TO SHORT-CIRCUIT THE FLOW OF MOISTURE TO TREE ROOTS? HOW DRY MUST THE ROOTING ZONE REMAIN BEFORE NO NET ANNUAL GROWTH IN THE TREE SYSTEM OCCURS? DOES TREE TISSUE WATER STRESS INFLUENCE FLAMMABILITY? FIRE EXCLUSION,LITTER,FUEL/BIOMASS ACCUMULATION,SOIL-WATER RELATIONS,ROOTS,POPULATION,PRODUCTIVITY

25. 00 000 WHAT MIGHT BE THE EFFECT OF SNAG DENSITY ON THE MELTING RATE OF THE SNOW PACK IN THE SPRING? CROWN BURN,SNAG,DENSITY,HYDROLOGY,SNOW

26. 00 000 WHAT MIGHT BE THE EFFECT OF VARIOUS DEGREES OF DUFF REMOVAL AND MINERALIZATION, AS SEEN IN THE EMERGENCE OF VARIOUS PLANT SPECIES FROM THE SOIL? LITTER,REPRODUCTION,VEGETATION,POPULATION

27. 00 000 WHAT PROCEDURES ARE RECOMMENDED FOR POROSITY DETERMINATIONS OF ASHED ORGANIC SURFACES? EXPERIMENT ORIENTED QUESTION,ASH,SOIL STRUCTURE

28. 00 018 WHAT WOULD HAPPEN, IF IN FOREST TYPES OTHER THAN PONDEROSA PINE, CONTROLLED BURNING (CROWN FIRE) PRECEDED HARVEST? THIS WOULD BE DONE TO ELIMINATE ALL OF THE PRESENT POST-LOGGING TREATMENTS, PERHAPS. ALTHOUGH SOME TIMBER MIGHT BE LOST, SOME REDUCED IN QUALITY, WOULD TOTAL AND LONG-RANGE COSTS AND BENEFITS BE MORE OR LESS? MANIPULATION COMPARISON

29. 00 051 CAN WE EVENTUALLY ACCOMPLISH MOST OF OUR OBJECTIVES FROM BURNING IN CONFEROUS FORESTS WITH LOW INTENSITY FIRES? ARE SOME HIGH INTENSITY FIRES NECESSARY? MAYBE THE BEST FIRE IS ONE WITH A WIDE VARIETY OF INTENSITIES. FIRE INTENSITY,MANIPULATION COMPARISON,EXPERIMENT ORIENTED QUESTION

30. 00 051 FOR MAXIMUM ESTABLISHMENT AND SURVIVAL OF NEW TREES FOLLOWING A BURN, HOW WISE IS IT TO RESEED BURNS WITH GRASS? PRESENTLY, THE MORTALITY IS VERY HIGH AND I SUSPECT THAT COMPETITION FROM GRASS HAS A LOT TO DO WITH IT. COMMUNITY,COMPETITION,REPRODUCTION

31. 00 051 HOW CAN DOUGLAS-FIR COMMUNITIES BE BURNED AND STILL RESEED THEMSELVES NATURALLY? REPRODUCTION,SEED

32. 00 051 HOW DO MICROENVIRONMENT CHANGES, CAUSED BY FIRE, ENHANCE FIRE-LOVING SPECIES SUCH AS ASPEN AND MANY SHRUBS? EXPERIMENT ORIENTED QUESTION

33. 00 051 HOW ESSENTIAL IS FIRE IN CONTROLLING THE BOUNDARY BETWEEN FORESTS AND GRASSLANDS? SUCCESSION,ECOTONE,MOSAIC,GRASSLAND

34. 00 051 WHAT IS THE ROLE OF FIRE IN THE VARIOUS LODGEPOLE PINE COMMUNITIES? CAN FIRE BE USED TO CHANGE THE COMPOSITION OF THESE COMMUNITIES TO ENHANCE WILDLIFE FORAGE? COMMUNITY,SHRUB UNDERSTORY,HERBAGE UNDERSTORY,PRODUCTIVITY

35. 00 053 CAN THE FUNGUS PORIA WEIRII, WHICH CAUSES ROOT ROT IN DOUGLAS-FIR AND WHICH EXISTS IN DEAD ROOT MATERIAL IN THE SOIL AND ATTACKS ROOTS OF LIVING TREES, BE DESTROYED BY USE OF FIRE? FUNGUS,ROOTS,SOIL,ORGANISM

36. 00 053 DOES FIRE SUPPRESSION INCREASE OR DECREASE LEVELS OF DISEASE AND INSECT PESTS IN FOREST ECOSYSTEMS? FIRE EXCLUSION,DISEASE,INSECT

37. 00 053 HOW ARE LEVELS AND TYPES OF SOIL MICROORGANISMS AFFECTED BY FIRE? DOES OCCASIONAL LOW INTENSITY BURNING INCREASE SOIL MICROBIAL ACTIVITY AND ALLOW FOR RETENTION OF NUTRIENTS IN THE ECOSYSTEM, OR ARE THE RELEASED NUTRIENTS LOST TO RUN OFF AND DEEP PERCOLATION? MICROORGANISM,FIRE INTENSITY,NUTRIENTS,HYDROLOGY,COMMUNITY

38. 00 053 HOW MUCH DO FOREST FIRES CONTRIBUTE TO GENERAL LEVELS OF AIR POLLUTION IN COMPARISON TO INDUSTRIAL SOURCES OF AIR POLLUTIONS? AIR POLLUTION

39. 00 053 WHAT EFFECT DOES FIRE AT VARYING INTENSITIES HAVE ON LEVELS OF FOLIAGE DISEASES, ROOT DISEASES AND INSECT PEST POPULATIONS? FIRE INTENSITY,DISEASE,CROWN,ROOTS,INSECT,POPULATION

40. 00 054 DOES, OR HAS, FIRE MAINTAINED THE DISPUTED "CLIMAX" POSITION OF POPULUS TREMULOIDES IN AREAS OF THE GREAT BASIN? SUCCESSION, DECIDUOUS FOREST

41. 00 054 HOW DOES FUEL FLAMMABILITY CHANGE ALONG LATITUDINAL OR ECOLOGICAL GRADIENTS WITHIN THE RANGE OF PINUS PONDEROSA, P. MONTICOLA, LARIX OCCIDENTALIS, PSEUDOTSUGA MENZIESII (AND OTHER SPECIES)? FLAMMABILITY,CONTINUUM

42. 00 054 IS THE BARK THICKNESS GREATER IN THE PROGENY OF TREES THAT SURVIVED IN PERIODS WHEN FIRE WAS FREQUENT (FOR EXAMPLE, P. PONDEROSA TREES NOW OVER 300 YRS. OLD) THAN IN PROGENIES OF TREES NOW REPRODUCTIVELY MATURE (50-60 YRS.) THAT HAVE NOT BEEN SUBJECTED (I.E., UNSELECTED) TO PERIODIC FIRES? IN OTHER WORDS HAS THERE BEEN A CHANGE IN THE GENETIC STRUCTURE OF THE POPULATIONS IN THIS CHARACTERISTIC IN TWO GENERATIONS? HEAT EFFECTS,FIRE FREQUENCY,STEM,GENETIC RESPONSE,POPULATION

43. 00 054 NON-WETTABLE SOILS ARE KNOWN TO OCCUR WHERE NON-WETTABLE SUBSTANCES, DERIVED FROM PLANTS AND PLANT LITTER, ACCUMULATE IN THE SOIL: THEY ARE AFFECTED BY SOIL TEMPERATURES IN VARIOUS WAYS DURING FIRES. THE PLANTS ON SUCH SITES CONTAIN THESE CHEMICALS APPARENTLY BECAUSE THEY ARE OF SELECTIVE ADVANTAGE TO THESE PLANTS, AND FIRE MAY BE PART OF THIS SYSTEM. WHAT ARE THE PLANT-FIRE-SOIL RELATIONSHIPS THAT FAVOR THE PRODUCTION OF THESE COMPOUNDS? IN WHAT WAY IS NON-WETTABLE SOIL (INDIRECTLY FIRE INDUCED) OF SELECTIVE ADVANTAGE TO THE SHRUB SPECIES GROWING ON THESE SITES? SOIL-WATER RELATIONS,FIRE BEHAVIOR

44. 00 054 WHAT ARE THE RELATIVE FUEL FLAMABILITIES OF CONIFEROUS SPECIES IN WESTERN FORESTS AND HOW ARE THESE VALUES RELATED TO THEIR SUCCESSIONAL POSITION (EARLY-SUCCESSIONAL, MID-SUCCESSIONAL, LATE-SUCCESSIONAL)? FLAMMABILITY,SUCCESSION

45. 00 054 WHAT IS THE CORRELATION BETWEEN FLAMMABILITY AND THE FREQUENCY OF FIRES THROUGHOUT THE RANGE OF A GIVEN SPECIES? FLAMMABILITY,FIRE FREQUENCY

46. 00 218 WHAT IS THE PROBABILITY THAT DOUGLAS FIR ON "FIRE-MAINTAINED" SITES WILL REACH HARVESTABLE MATURITY, AND HOW DOES IT COMPARE TO PINE? FIRE EXCLUSION,ECOSYSTEM,SUCCESSION,PRODUCTIVITY

47. 00 560 HOW CAN WE PREDICT THE EFFECTS OF A HOT GROUND FIRE FOLLOWING A CROWN FIRE ON SOIL FERTILITY? WHAT DEGREE OF STERILITY WILL OCCUR, IF ANY? HEAT EFFECTS,FIRE EFFECTS,SOIL,NUTRIENTS,FIRE INTENSITY

48. 00 560 WHAT ARE THE ECONOMIC TRADE-OFF VALUES OF LEAVING NESTING TREES FOR VARIOUS WILDLIFE SPECIES IN TIMBER SALES, CONSIDERING SOME OF THESE NESTING TREES MAY BE DISEASED OR BE INFESTED WITH INSECTS? ECONOMIC EFFECTS,BIRD,SMALL MAMMAL,INSECT,HUMAN DISTURBANCE,DISEASE

49. 01 036 WHAT EFFECT DOES FIRE INTENSITY, SIZE AND FREQUENCY HAVE ON LAKES IN VARYING TROPHIC STATES (PRODUCTIVITY OF DIFFERENT LAKE COMMUNITIES OF FISH, PLANKTON AND BENTHOS) AND IN DIFFERENT WATERSHEDS (DIFFERENT WATER AND NUTRIENT BUDGETS)? FIRE INTENSITY,AREA SIZE,FIRE FREQUENCY,LAKE,PRODUCTIVITY,WATERSHED,HYDROLOGY,NUTRIENTS

50. 01 036 WHAT EFFECT DOES FIRE INTENSITY,SIZE, FREQUENCY AND CHANGE IN DETRITAL ACCUMULATION HAVE ON ORGANIC AND INORGANIC SUBSTRATE COMPOSITION AND MINERALIZATION IN BOTTOM SEDIMENTS OF LAKES? A) IF CHANGES OCCUR, WILL THE VARIATIONS BE RELATED TO PROPORTIONS AND DIFFERENCES IN AVAILABILITY OF CARBON AND NITROGEN IN VARIOUS ORGANIC SUBSTRATES? B) HOW DO CHANGES IN THE AVAILABILITY OF ORGANIC NITROGEN LIMIT THE UTILIZATION OF CARBON COMPOUNDS? FIRE INTENSITY,AREA SIZE,FIRE FREQUENCY,FUEL REDUCTION,LAKE,NUTRIENTS

51. 01 037 DO THE "ASHBED EFFECTS" OF BURNING, SO WELL KNOWN IN AUSTRALIA AND NEW ZELAND OCCUR IN WESTERN NORTH AMERICA? EXPERIMENT ORIENTED QUESTION

52. 01 037 DOES THE EXCLUSION OF FIRE RESULT IN TOXIC ACCUMULATIONS AND CONTRIBUTE TO MORTALITY OF, FOR EXAMPLE, REDWOODS? FIRE EXCLUSION,ALLELOPATHY,MORTALITY

53. 01 037 THE FIRST NEED IS TO DEFINE A MORE OR LESS STANDARD METHOD OF MEASURING FIRE INTENSITY, IN PARTICULAR, AND OTHER BEHAVIOR CHARACTERISTICS. EXPERIMENT ORIENTED QUESTION

54. 01 037 HOW DOES FIRE INFLUENCE THE MICROCLIMATE AND MORE SPECIFICALLY THE ENERGY BUDGET AND WATER BALANCE OF A SITE AND SO THE REGENERATING CROP? MICROCLIMATE

55. 01 037 UNDER WHAT CIRCUMSTANCES AND BURNING CONDITIONS IS SLASH BURNING AN ECOLOGICALLY AND ECONOMICALLY JUSTIFIABLE METHOD OF SITE PREPARATION - IN TERMS OF EROSION, SOIL NUTRIENT STATUS, SEEDLING DEVELOPMENT, PERCENT SPECIES DEVELOPMENT, CROP ECONOMICS? FUEL REDUCTION,SOIL EROSION,NUTRIENTS,REPRODUCTION,ECOSYSTEM

56. 01 038 DOES FIRE INDUCE FIXATION OF POTASSIUM? NUTRIENTS

57. 01 038 DOES FIRE INDUCE FORMATION OF CONCRETIONS ON NODULES? SOIL STRUCTURE

58. 01 038 DOES FIRE OXIDIZE AND DEHYDRATE AMORPHOUS SESQUIOXIDES? IF THIS IS THE CASE, THE SOIL WOULD PROBABLY ACQUIRE A BETTER STRUCTURE BUT DECREASE ITS CATION EXCHANGE CAPACITY. SOIL STRUCTURE,NUTRIENTS

59. 01 038 HAS FIRE ANY EFFECT ON NUTRIENTS RELEASE FROM THE COLLOIDAL FRACTION? NUTRIENTS

60. 01 038 THE PHENOMENON IS KNOWN TO OCCUR AS RESULT OF FIRE, BUT WHAT ARE THE CONDITIONS FOR INDUCING HYDROPHOBICITY IN THE SOIL? FIRE INTENSITY,SOIL-WATER RELATIONS

61. 01 038 WHAT IS THE EFFECT OF FIRE ON COLLAPSING OF EXPENDABLE MINERALS SUCH AS VERMICULITE OR MONTMORILLONITE? SOIL STRUCTURE

62. 01 040 IN SMALL MAMMALS, THE PETRUCEWICZ EFFECT SAYS THAT SEVERE ALTERATION OF THE ENVIRONMENT WILL CAUSE A RISE IN THE REPRODUCTIVE RATE THROUGH A WEAKENING OF SOCIAL CONTROLS. HOW IMPORTANT IS THIS EFFECT IN THE POPULATION DYNAMICS OF MAMMALS IN ENVIRONMENTS WHICH ARE BURNED OVER? SMALL MAMMAL,REPRODUCTION,POPULATION,ANIMAL BEHAVIOR

63. 01 040 WHEN A SPROUTING SHRUB IS BURNED, THERE ARE TWO EFFECTS: -- A MECHANICAL GIRDLING WHICH INDUCES SPROUTING, AND THE FERTILIZATION FROM THE ASH. HOW MUCH IS EACH OF THESE INVOLVED IN THE PRE-AND POST-BURN NUTRIENT QUALITY OF THE FORAGE? SHRUBLAND,ORGAN,NUTRIENTS,ASH

64. 01 042 WHAT KINDS OF FIRE PRODUCE HYDROPHOBICITY IN SOILS? HOW DOES TEMPERATURE RELATE TO THE DEPTH OF HYDROPHOBICITY? HOW DOES FIRE AFFECT SOIL STRUCTURE? CAN THESE RELATIONSHIPS BE QUANTIFIED? SOIL-WATER RELATIONS,FIRE INTENSITY,SOIL STRUCTURE

65. 01 043 HOW AND TO WHAT DEGREE ARE KEY PROCESSES OF NUTRIENT MOBILIZATION/IMMOBILIZATION AFFECTED BY FOREST FIRES OF DIFFERENT KINDS AND INTENSITY? (KEY PROCESSES BEING CHEMICAL SOLUTION AND FIXATION, BIOLOGICAL MINERALIZATION AND UPTAKE, AND TRANSFER MECHANISMS OF THE MAJOR NUTRIENTS (N,P,K,CA) WITHIN THE SOILS) HOW LONG DO THESE EFFECTS LAST AND WHAT ARE THE CONSEQUENCES FOR LONGTERM (SUCCESSIONAL, EROSIONAL) PROCESSES, OR HOW DO THE PARAMETERS FOR NUTRIENT BEHAVIOR MODELS VARY WITH ECOSYSTEM DEVELOPMENT? FIRE INTENSITY,NUTRIENTS,SUCCESSION,SOIL EROSION

66. 01 043 HOW AND TO WHAT DEGREE IS THE BUFFER CAPACITY IN THE FOREST SOIL FOR NUTRIENT CONSERVATION, POLLUTANT RETENTION, AND WATER STORAGE AFFECTED BY FIRES OF DIFFERENT KINDS AND INTENSITIES? FIRE INTENSITY,NUTRIENTS,SOIL-WATER RELATIONS

67. 01 046 THERE IS A NEED TO UNDERSTAND INTERRELATIONSHIPS BETWEEN FOREST FIRES AND INSECTS - PARTICULARLY BARK BEETLES. FOR EXAMPLE, LODGEPOLE PINE STANDS ARE PASSED ON TO FUTURE SUCCESSIONAL STAGES BY LIGHT/MEDIUM FIRES WITH THE AID OF THE MOUNTAIN PINE BEETLE. WHAT WOULD HAPPEN IF FIRE WERE EXCLUDED ENTIRELY? POSSIBLY, STAND DYNAMICS WOULD DEPEND ENTIRELY ON BARK BEETLES I.E., THERE WOULD BE TOTAL STAND DESTRUCTION WITHOUT THE AID OF FIRE TO REGENERATE THE STANDS. ON THE OTHER HAND, FIRE EXCLUSION IN PONDEROSA PINE STANDS WOULD YIELD DENSER STANDS, AND MORE DEAD MATERIAL FOR DENDROCTONUS PONDEROSAE. HOWEVER, THERE IS THE POSSIBILITY THAT MORE STEMS/ACRE COULD BE CARRIED FORTH I.E., ADDITIONAL VIGOROUS, NON-SUSCEPTIBLE TREES WOULD BE MAINTAINED. INSECT,SUCCESSION,FIRE INTENSITY,FIRE EXCLUSION,POPULATION,REPRODUCTION

68. 01 048 APPROPRIATE FREQUENCY DISTRIBUTIONS HAVE NEVER BEEN DEVELOPED FOR FOREST FIRE PHENOMENA: CONSEQUENTLY IT HAS NOT BEEN POSSIBLE TO COMPARE TIME PERIODS OR THE EFFECTS OF FIRE CONTROL ACTIVITIES. A. WHAT MATHEMATICAL FREQUENCY DISTRIBUTION(S) ARE APPROPRIATE FOR SUCH STATISTICS AS NUMBERS OF YEARS BY FIRE-OCCURRENCE AND AREA-BURNED CLASS, NUMBER OF FIRES BY FIRE-SIZE AND RATE-OF-SPREAD CLASS, AND THE LIKE? B. WHAT TECHNIQUES ARE VALID FOR COMPARING TIME PERIODS, EFFECTS OF TREATMENTS, ETC.? C. HAS MODERN FIRE CONTROL SIGNIFICANTLY ALTERED THE NATURAL FIRE REGIMEN? EXPERIMENT ORIENTED QUESTION,FIRE DENSITY,FIRE STATISTICS

69. 01 048 CAN POST-GLACIAL FIRE HISTORY BE TRACED BY MEANS OF CHARCOAL COUNTS FROM LAKE AND BOG SEDIMENTS? EXPERIMENT ORIENTED QUESTION,FIRE FREQUENCY,CHARCOAL,LAKE

70. 01 048 DID EXTENSIVE FOREST FIRES RESULT FROM POST-GLACIAL VOLCANIC ACTIVITY IN THE CASCADES? EXPERIMENT ORIENTED QUESTION,VOLCANIC FIRE,FIRE HISTORY

71. 01 048 DOES FIRE SIGNIFICANTLY AFFECT POPULATIONS AND ACTIVITY OF PRIMARY AND SECONDARY FOREST INSECTS BY (A) MAKING FIRE-DAMAGED TREES MORE ATTRACTIVE AND/OR LESS RESISTANT TO ATTACK, (B) UPSETTING PREDATOR-PREY RELATIONSHIPS, (C) MODIFYING MICROCLIMATE, ETC.? (PARTICULARIZE BY TREE SPECIES.) INSECT,PREDATION,MICROCLIMATE,POPULATION

72. 01 125 FOR GIVEN POPULATION DENSITIES OF ELK AND DEER, WHAT ARE THE OPTIMAL AREA SIZES AND SHAPES FOR CROWN-BURN SURROUNDED BY UNBURNED FOREST? HOW LARGE MUST A CROWN-BURNED AREA BE TO HAVE LITTLE VALUE AS A SUBSEQUENT FOOD SOURCE FOR THESE ANIMALS? FOR A GIVEN POPULATION DENSITY, DO SMALL BURNS DISPLAY RETARDED ECOLOGICAL SUCCESSION BY VIRTUE OF BEING OVER-BROWSED? WHAT IS THE RELATION BETWEEN BURN SIZE AND POPULATION DENSITY WHICH WOULD CAUSE THIS RETARDATION? GAME ANIMAL, POPULATION,AREA SIZE,MOSAIC,CROWN BURN,HERBIVORY,

73. 01 125 WHAT ARE THE COMPARABLE EFFECTS OF BROADCAST BURNING OF LOGGING SLASH VS. PILE-AND-BURN, AS SEEN IN ANIMAL PREDATION ON TREE SEEDS AND TREE REGENERATION? MANIPULATION COMPARISON,SEED,ANIMALS,REPRODUCTION

74. 01 125 WHAT ARE THE EFFECTS OF DIFFERENT DEGREES OF FUEL CONSUMPTION AS SEEN IN THE POPULATION DYNAMICS OF BURROWING SMALL MAMMALS? FUEL REDUCTION,SMALL MAMMAL,POPULATION

75. 01 125 WHAT IS THE EFFECT OF DIFFERENT DEGREES OF FUEL CONSUMPTION ON ANIMAL DAMAGE TO REGENERATING TREES OF VARIOUS SIZE CLASSES AND SPECIES? FUEL REDUCTION,ANIMALS,REPRODUCTION,SIZE CLASS

76. 01 125 WHAT IS THE EFFECT OF DIFFERENT DEGREES OF FUEL CONSUMPTION ON DENSITY OF VIABLE TREE SEEDS ON THE SOIL, IN TERMS OF SEED-GATHERING RODENT POPULATION DYNAMICS? FUEL REDUCTION,SEED,REPRODUCTION,PREDATION,SMALL MAMMAL

77. 01 125 WHAT IS THE EFFECT OF DIFFERENT SITE CONDITIONS (SOIL DEPTH, STRUCTURE, MOISTURE, SLOPE, EXPOSURE, SOIL NUTRIENTS, ETC.) ON VEGETATIVE RESPONSE OF ANNUALS, FORBS AND SHRUBS TO DIFFERENT FIRE INTENSITIES? FIRE INTENSITY, HERBAGE UNDERSTORY,SUCCESSION,CROWN BURN,SOIL,TOPOGRAPHY,NUTRIENTS

78. 01 125 WHAT IS THE EFFECT OF SLASH DISPOSAL BY BURNING, AS SEEN IN POPULATION DYNAMICS OF BIRDS? FUEL REDUCTION,BIRD,POPULATION

79. 01 125 WHAT MIGHT BE THE EFFECT OF CHANGING LEVELS OF DEBRIS ON POPULATION DYNAMICS OF GROUND-SURFACE WILDLIFE? HOW ARE THESE DYNAMICS CHANGED BY A FIRE, CONSIDERING DIFFERENT FUEL LOADS WILL INDUCE DIFFERENT FIRE RADIATION INTENSITIES, AND CAN POSSIBLY, THEN, CAUSE DIFFERENT SUCCESSIONAL RESPONSES IN THE VEGETATION? ANIMALS,POPULATION,FUEL/BIOMASS ACCUMULATION,FIRE INTENSITY,SUCCESSION

80. 01 127 DOES CONTROLLED BURNING PRODUCE A MEASURABLE EFFECT ON SNOW ACCUMULATION, SNOWMELT, AND TIMING AND MAGNITUDE OF PEAK RUNOFF? PRESCRIBED FIRE,SNOW,HYDROLOGY,STREAM

81. 01 127 WHAT IS THE EFFECT OF WILDFIRE (OR CONTROLLED BURNING) ON THE CHEMISTRY, TEMPERATURE, AND TURBIDITY OF WATER FLOWING FROM THESE AREAS AND HOW DO THESE CHANGES AFFECT FISH AND OTHER POPULATIONS? HOW LONG DO THE ABOVE EFFECTS LAST UNDER COMPLETE FIRE EXCLUSION? PRESCRIBED FIRE,NUTRIENTS,MICROCLIMATE,STREAM,FISH,ECOSYSTEM

82. 01 127 WHAT IS THE EFFECT OF WILDFIRE ON SNOW ACCUMULATION, SNOWMELT, AND TIMING AND MAGNITUDE OF PEAK RUNOFF? FIRE EFFECTS,SNOW,HYDROLOGY,STREAM

83. 01 221 SUGGESTED AREAS OF INQUIRY ARE: A COMPARATIVE STUDY OF WILDLIFE IMPACTS FROM LOGGING WASTE DISPOSAL BY BURNING VS. NON-BURNING METHODS. MANIPULATION COMPARISON,FUEL REDUCTION,ANIMALS

84. 01 222 THE RELEASE, ACCUMULATION, OR DESTRUCTION OF SOIL-PLANT NUTRIENTS APPEARS HIGHLY VARIABLE WITHIN A BURNED AREA. WHAT ARE THE EFFECTS ON SUBSEQUENT EFFORTS TO MODIFY HABITAT WITH SELECTED PLANT SPECIES?
NUTRIENTS,PLANTING

85. 01 222 WHAT ARE THE CONSEQUENCES OF HIGH ELEVATION (> 4000') BURNS ON SUBSEQUENT VEGETATION SUCCESSION WHERE THERE IS A SPARSE SEED SOURCE? PRIMARILY, WHAT ARE THE EFFECTS ON WILDLIFE?
SEED,REPRODUCTION,SUCCESSION,ANIMALS

86. 01 222 WHAT ARE THE EFFECTS OF NAPALM TYPE SLASH BURNS, OFTEN COVERING 100 ACRES, ON RESIDENT FAUNA? FIRE INTENSITY,AREA SIZE,ANIMALS

87. 01 222 WHAT EFFECT DOES PRE-BURN USE OF VEGETATION-DESSICATING CHEMICALS HAVE ON POST BURN VEGETATION? CHEMICAL RETARDANT EFFECTS,SUCCESSION

88. 01 222 WHY ARE GRASSES (SEEDED BY MAN) EMPHASIZED IN ROADSIDE OR ACCIDENTALLY BURNED AREA REVEGETATION, EVEN ON AREAS WHERE GRASSES ARE CONSIDERED DETRIMENTAL TO REFORESTATION AND PROVIDE POOR WILDLIFE BROWSE?
PLANTING,COMPETITION,ANIMALS,EXPERIMENT ORIENTED QUESTION

89. 01 226 ARE THERE STREAMS WHERE PRODUCTION COULD BE INCREASED BY FIRE OF THE RIGHT KIND (I.E., NOT LEADING TO EXCESSIVE EROSION AND STREAM SILTATION BUT RELEASING NUTRIENTS INTO THE STREAM)?
STREAM,ECOSYSTEM,FISH,NUTRIENTS

90. 01 226 I THINK IT IS IMPORTANT TO EVALUATE SHORT TERM AND LONG TERM EFFECTS OF FIRES OF DIFFERENT INTENSITIES. ONE WOULD EXPECT A CHANGE IN STREAM PH, FOR EXAMPLE, THAT MIGHT INITIALLY REDUCE STREAM PRODUCTION, BUT AT SOME STAGE OF RECOVERY , PRODUCTION MIGHT BE GREATER THAN BEFORE THE FIRE, DEPENDING ON SOIL COMPOSITION, THE TYPE OF VEGETATION BEFORE THE FIRE, ETC.. FIRE INTENSITY,PH,STREAM,PRODUCTIVITY

91. 01 226 I THINK THERE ARE IMPORTANT QUESTIONS RELATING TO FIRE FIGHTING THAT NEED TO BE EXAMINED MORE CLOSELY. ARE SOME OF THE FIRE RETARDANTS AND SPRAYS DAMAGING TO FISH PRODUCTION? DO THEY AFFECT THE FISH DIRECTLY WHEN THEY ENTER THE WATER OR DO THEY AFFECT FISH FOOD ORGANISMS? CHEMICAL RETARDANT EFFECTS,FISH,STREAM,INSECT,PRODUCTIVITY

92. 01 226 IS IT POSSIBLE TO USE FIRE TO MAINTAIN A DESIRABLE REGULATION OF DENSITY OF RIPARIAN VEGETAL COVER (E.G., WILLOWS OR ALDER) WHICH MIGHT ENHANCE PRODUCTION IN STREAMS WHERE TERRESTRIAL INSECTS ARE AN IMPORTANT FOOD SOURCE FOR FISH? FISH,STREAM,VEGETATION,INSECT

93. 01 226 WHAT IS THE EFFECT OF A CHANGE IN RUNOFF PATTERN ON THE CARRYING CAPACITY OF A STREAM? WHAT IS THE EFFECT ON PRODUCTION OF STREAM DRIFT ORGANISMS?
HYDROLOGY,STREAM,PRODUCTIVITY

94. 01 295 ARE FIRE SUPPRESSION PRACTICES ON SLOPE FORESTS ACCELERATING AQUATIC SUCCESSION PROCESSES AT OPEN SUBALPINE LAKE SYSTEMS WITH IMPORTANT RECREATIONAL VALUE? ECOSYSTEM,FIRE EXCLUSION,TOPOGRAPHY,SUCCESSION,HYDROLOGY,LAKE,RECREATIO N

95. 01 295 CERTAIN MONTANE LAKE SITES IN OLYMPIC NATIONAL PARK HAVE EVIDENTLY REDUCED FOREST LITTER ACCUMULATIONS DUE TO INTENSIVE CAMPING AND FIREWOOD GATHERING. GIVEN INCREASING RECREATION TRENDS WHAT MIGHT BE THE ECOLOGICAL EFFECTS OF LITTER REMOVAL IN MONTANE AND SUBALPINE SUBSYSTEMS? RECREATION,LITTER,FUEL/BIOMASS ACCUMULATION

96. 01 295 DOES FIRE SIGNIFICANTLY CREATE SUBALPINE MEADOWS IN MOIST CONIFEROUS ECOSYSTEMS SUCH AS THE OLYMPICS? GRASSLAND,SUCCESSION

97. 01 295 WHAT IS THE COMPOSITE ROLE OF WILDFIRE IN MOIST CONIFEROUS SYSTEMS SUCH AS OLYMPIC NATIONAL PARK? WHAT MANNER OF "FIRE POTENTIAL" BASELINE COULD SERVE AS A MANAGEMENT TOOL TO GUIDE AN EFFECTIVE ZONATION AND SELECTIVE CONTROL OF WILDFIRE, CONSISTENT WITH THE "NATURAL AREA" AND WILDERNESS POLICIES OF THE NATIONAL PARK SERVICE IN THIS AREA? GENERAL FIRE MANAGEMENT

98. 01 295 WHAT IS THE RELATIONSHIP IN WILDERNESS, MOIST CONIFEROUS SYSTEMS OF FIRE, AND OTHER PERTURBATIONS (AVALANCHES), TO THE DENSITY, DISTRIBUTION AND DYNAMICS OF THE UNGULATE COMPONENT OF THE BIOMASS (ROOSEVELT ELK AND BLACKTAIL DEER)? IN LOGGED-OVER LANDS THIS HAS BEEN STUDIED, BUT NOT TO MY KNOWLEDGE IN PRIMARY SUCCESSION CIRCUMSTANCES SUCH AS THE LARGELY UNDISTURBED (BY HUMANS) WET, WESTSIDE OF OLYMPIC NATIONAL PARK. SNOW,FUEL/BIOMASS ACCUMULATION,SUCCESSION,GAME ANIMAL,POPULATION,MANIPULATION COMPARISON

99. 01 390 ARE SNAGS BETTER LEFT STANDING OR DOWN IN AN OLD BURN WHEN CONSIDERING PROTECTION, SPREAD, INTENSITY, ETC. OF A SECOND BURN? SNAG,LIGHTNING-CAUSED FIRE,FIRE FREQUENCY,MANIPULATION COMPARISON,AESTHETICS

100. 01 395 APPARENTLY PODSOL SOILS ARE FORMED DURING FIRE. DOES THIS BREAK DOWN AFTERWARDS? WHAT EFFECT HAS THIS ON REGENERATION? SOIL,FIRE EFFECTS,REPRODUCTION,MICROCLIMATE,FIRE BEHAVIOR

101. 01 395 CAN SMOKE FROM WILDLAND FIRE BE CONSIDERED POLLUTION? SMOKE EFFECTS,AIR POLLUTION,FIRE EFFECTS

102. 01 395 DOES YARDING OF UNUTILIZED MATERIAL (YUM) SIGNIFICANTLY REDUCE FIRE POTENTIAL AND INTENSITY? FUEL REDUCTION,FIRE INTENSITY

103. 01 395 HOW MANY TONS ARE THERE IN A THOUSAND FEET OF REGULAR SLASH CONSISTING OF WESTERN RED CEDAR, HEMLOCK, DOUGLAS FIR, SILVER FIR,, ETC? FUEL/BIOMASS ACCUMULATION,CONIFEROUS FOREST,FUEL REDUCTION

104. 01 395 IS FIRE DAMAGE TO A STREAM PERMANENT OR TEMPORARY? HOW LONG DOES IT TAKE FOR A STREAM TO RECOVER? WHAT ABOUT LAKES? VALUE JUDGEMENT,STREAM,FIRE EFFECTS,TIMING

105. 01 395 IS SLASH BURNING AN AID OR A HINDRANCE TO REGENERATION? PRESCRIBED FIRE,FUEL REDUCTION,REPRODUCTION

106. 01 395 WHAT CAUSES FIRE "WHIRL WINDS" OR "FIRE DEVILS"? SOIL,FIRE EFFECTS,FIRE INTENSITY

107. 01 395 WHAT EFFECT DOES BURNED DUFF HAVE IN REGENERATION? REPRODUCTION,FIRE EFFECTS,DUFF

108. 01 395 WHAT EFFECT DOES FIRE HAVE ON THE DUFF LAYER IN REGARDS TO HARDENING OR ELIMINATING THE LAYER? DUFF,FIRE EFFECTS

109. 01 395 WHAT MAKES UP SMOKE? ISN'T SMOKE MOSTLY STEAM? SMOKE EFFECTS,AIR POLLUTION

110. 01 395 WHEN BURNING A SLASH UNIT, LET US SAY THE FUEL TYPES ARE M.M. HOW MUCH OR WHAT PERCENTAGE OF THE FUEL ON THE GROUND IS ACTUALLY CONSUMED BY FIRE UNDER NORMAL CONDITIONS? FUEL REDUCTION,PRESCRIBED FIRE,LITTER,DUFF,COMMUNITY

111. 01 396 DOES THE BURNING OF WINDROWS OR PILED SLASH IN CLEARCUTS CAUSE EXCESSIVE SOIL DAMAGE? IF SO, DOES THE INCREASED FUEL HAZARD REDUCTION COMPENSATE FOR THE LOSS OF PRODUCTION RESULTING FROM THE SOIL DAMAGE? PRODUCTIVITY,SOIL,PRESCRIBED FIRE,FUEL REDUCTION,PRODUCTIVITY,FIRE EFFECTS,NUTRIENTS

112. 01 396 HAVE WILDFIRES CREATED AND MAINTAINED HUCKLEBERRY FIELDS? WHAT TYPE OF MANAGEMENT IS NEEDED TO PERPETUATE THE HUCKLEBERRY- CONTROLLED BURNING- SELECT LOGGING, ETC? HOW MUCH SHADE CAN THEY TOLERATE? FIRE EXCLUSION,VEGETATION,GENERAL FIRE MANAGEMENT,RECREATION,PUBLIC REACTION,PRESCRIBED FIRE

113. 01 396 IS IT BETTER TO PLANT FIRE SPECIES (LARCH PONDEROSA PINE OR LODGEPOLE PINE) ON BURNED CLEARCUTS OR BURNS, OR IS IT BETTER TO PLANT THE SPECIES HARVESTED OR DESTROYED (DOUGLAS FIR, WHITE FIR OR SPRUCE)? PLANTING,COMMUNITY,FIRE EFFECTS,CONIFEROUS FOREST

114. 01 399 DO LARGE QUANTITIES OF ORGANIC MATERIAL SUCH AS CLEAR CUT SLASH HAVE DETRIMENTAL CHEMICAL EFFECTS ON THE SOIL? FUEL/BIOMASS ACCUMULATION,DECOMPOSITION,SOIL,NUTRIENTS

115. 01 399 DOES CONTINUED USE OF FIRE IN SLASH DISPOSAL REDUCE SOIL NUTRIENTS AND GRADUALLY DEPLETE A NATURAL DEVELOPMENT WITHIN THE SOIL? IS IT BETTER TO LEAVE ALL ORGANIC MATERIAL, SLASH,DUFF, ETC., FOR NATURAL DECOMPOSITION TO BUILD UP SOIL FERTILITY? TIMING,FUEL REDUCTION,PRESCRIBED FIRE,SOIL,NUTRIENTS,DUFF,LITTER,DECOMPOSITION

116. 01 399 DOES PRESCRIBED BURNING ON ISOLATED PATCHES, SUCH AS CLEARCUTS, HAVE ANY SIGNIFICANT IMPACT ON THE OVERALL ECOLOGICAL BALANCE OF A GIVEN AREA - E.G. A MUCH LARGER AREA THAN THE BURN ITSELF? PRESCRIBED FIRE,AREA SIZE,FUEL REDUCTION,ECOSYSTEM

117. 01 399 WHAT CHANGES IN EFFECT, IF ANY, ARE THERE BETWEEN CONTROLLED BURNING IN THE SPRING AND FALL AS NOW DONE AND THE NATURAL FIRES WHICH IN MANY CASES OCCURRED DURING EXTREME CONDITIONS? IS THERE ANY DETRIMENTAL, LASTING EFFECT ON THE CHEMICAL PROPERTIES OF SURFACE WATERS COMING FROM A BURNED AREA? PRESCRIBED FIRE,TIMING,FIRE HISTORY,FIRE EFFECTS,ECOSYSTEM

118. 01 399 WITHOUT USING FIRE, WHAT EFFECT CAN BE EXPECTED UPON PRESENT HABITATS DUE TO LONGTERM CHANGES IN VEGETATIVE GROWTH -SPECIES REGENERATED? FIRE EXCLUSION,SPECIES DIVERSITY,SUCCESSION,ECOSYSTEM

119. 01 400 IS THERE A RELATIONSHIP BETWEEN THE AMOUNT AND KIND OF REVEGETATION AND THE TIME OF YEAR A FIRE OCCURS? IF A FIRE OCCURS IN JULY OR AUGUST WHAT IS THE RELATIONSHIP TO ONE THAT OCCURS IN SEPTEMBER OR OCTOBER? FIRE EFFECTS,TIMING,REPRODUCTION

120. 01 400 WHAT ARE THE FIRE CHARACTERISTICS IN A DOZER-THINNED STAND OF TIMBER (USING A THINNING BLADE), WITH A CRUSHER, (TOMAHAWK) ATTACHED AND WITHOUT A CRUSHER, AS COMPARED TO AN UNTHINNED STAND OF THE SAME DENSITY AND SPECIES COMPOSITION? HUMAN DISTURBANCE,FIRE EFFECTS,FIRE INTENSITY,MANIPULATION COMPARISON,DENSITY

121. 01 401 WHAT ARE THE EFFECTS OF VARIOUS FIRE INTENSITIES ON SOIL STABILITY ON STEEP SLOPES IN HIGH RAINFALL AREAS? TOPOGRAPHY,SOIL EROSION,FIRE EFFECTS,FIRE INTENSITY

122. 01 402 HOW MUCH, IF ANY, IS A SITE INDEX CHANGED BY FIRE? POPULATION GROWTH,REPRODUCTION

123. 01 402 IS IT WISE TO FALL SNAGS IN OLD BURNS? DO THEY, ONCE FELLED, PROVIDE NEEDED SHADE FOR SEEDLINGS? SNAG,FIRE EFFECTS,REPRODUCTION,ECOSYSTEM

124. 01 402 WHAT IS THE BEST TIME OF YEAR TO BROADCAST BURN CLEARCUTS IN ORDER TO GET WELL ESTABLISHED CONIFEROUS PLANTATIONS? TIMING,PRESCRIBED FIRE,FUEL REDUCTION,REPRODUCTION,PLANTING

125. 01 402 WHAT IS THE COST/BENEFIT RATIO INVOLVED WITH "LET BURN" POLICY IN ALPINE TIMBER TYPES, E.G., IS FIRE LINE CONSTRUCTION AND RETARDANT MORE DETRIMENTAL THAN FIRE? CHEMICAL RETARDANT EFFECTS,ECONOMIC EFFECTS,MOUNTAIN,HUMAN DISTURBANCE,FIRE EFFECTS

126. 01 403 WHAT MIGHT BE THE EFFECTS OF BURNING ON ELK CALVING AREAS, IN REGARD TO HOW LONG ELK WILL STAY OUT OF AN AREA IF THEY DO, OR WILL THEIR PAST HABITS CHANGE AS A RESULT OF THE BURNING IMPACT? EXPERIMENT ORIENTED QUESTION,GAME ANIMAL,REPRODUCTION,DISPERSION,ANIMAL BEHAVIOR

127. 01 582 HOW DOES THE BURNING OF A FOREST SITE AFFECT THE ESTABLISHMENT AND EARLY GROWTH OF RED ALDER? FIRE EFFECTS,DECIDUOUS FOREST,REPRODUCTION,POPULATION

128. 01 582 HOW EFFECTIVE ARE HARDWOOD STANDS (PARTICULARLY RED ALDER) AS FIRE BREAKS? DECIDUOUS FOREST,FLAMMABILITY,GENERAL FIRE MANAGEMENT,POPULATION

129. 01 618 HOW WILL CONTROLLED BURNS AFFECT UNDERSTORY SPECIES COMPOSTION IN PONDEROSA FOREST CURRENTLY UNDERSTORIED WITH BITTERBRUSH BUT VERY LITTLE GRASS? SHRUB UNDERSTORY,CONIFEROUS FOREST,PRESCRIBED FIRE,SPECIES DIVERSITY

130. 01 618 IN SOUTH CENTRAL WASHINGTION HOW FREQUENTLY SHOULD PONDEROSA PINE BE SUBJECTED TO GROUND FIRES IN ORDER TO APPROXIMATE NATURAL CONDITIONS? TIMING,FIRE FREQUENCY,CONIFEROUS FOREST,GROUND FIRE,PRESCRIPED FIRE

131. 01 619 DID NATURAL FIRES OCCURING IN THE INTERIOR PONDEROSA PINE TYPE PRIOR TO IMPOSITION OF FIRE CONTROL HAPPEN WITH ANY DEGREE OF REGULARITY? IF SO, HOW OFTEN SHOULD A STAND BE BURNED TO APPROXIMATE NATURAL CONDITIONS? FIRE FREQUENCY,PRESCRIBED FIRE,TIMING,LIGHTNING-CAUSED FIRE,COMMUNITY

132. 01 619 DO DIFFERENCES IN THE SEASON OF BURNING AND INTENSITY OF A BURN CAUSE ANY VARIATIONS IN THE COMPOSITION OF UNDERSTORY VEGETATION COMING IN AFTER THE FIRE? IF SO, CAN SUCH DIFFERENCES BE PREDICTED FOR BURNS AT DIFFERENT SEASONS AND LEVELS OF INTENSITY? FIRE EFFECTS,TIMING,PRESCRIBED FIRE,SPECIES DIVERSITY,FIRE INTENSITY,HERBAGE UNDERSTORY,SUCCESSION

133. 01 619 WE HAVE NOTED A TENDENCY FOR NOXIOUS WEEDS SUCH AS CANADA THISTLE AND DALMATION TOADFLAX TO INVADE FOLLOWING FIRE IN THE AREA. ARE THERE ANY WAYS TO HANDLE CONTROLLED BURNS TO AVOID THIS? PRESCRIBED FIRE,COMPETITION,SUCCESSION,FIRE EFFECTS

134. 01 621 CAN CONTROLLED FIRES BE USED IN SETTING BACK PLANT SUCCESSION TO MAINTAIN FOOD AND COVER AREAS FOR WILDLIFE AND YET RETAIN CONIFEROUS BLOCKS FOR TIMBER PRODUCTION? WHAT SIZED AREAS ARE ECONOMICALLY FEASIBLE? PRESCRIBED FIRE,SUCCESSION,ANIMALS,PRODUCTIVITY,AREA SIZE

135. 01 621 WHAT ADVERSE EFFECTS COULD BE ANTICIPATED FROM CONTROLLED FIRE ON LANDS THAT ARE SURROUNDED BY A SALT WATER BAY THAT IS A RICH ESTUARY SUSTAINING A RICH SHELLFISH CULTURE AND AQUATIC VEGETAL FOODS FOR WATERFOWL AND OTHER WILDLIFE? MY CONCERN HERE, IS RUN OFF EFFECTS. HOW LARGE A FIRE IT WOULD TAKE TO PRODUCE ADVERSE EFFECTS. PRESCRIBED FIRE,AREA SIZE,NUTRIENTS,SOIL EROSION,AQUATIC,BIRD,ANIMALS

136. 01 641 COULDN'T BOTH WILDLIFE AND TIMBER BENEFIT IN SOME AREAS IF CERTAIN TYPES OF FIRES ARE LEFT TO BURN AND NOT IMMEDIATELY SUPPRESSED "AT ANY COST"? I HAVE NO OBJECTION TO REMOVAL OF TIMBER, BUT COULDN'T SOME OF THE DEAD END ROADS BE CLOSED TO VEHICULAR TRAFFIC AFTER

COMPLETION OF THE SALE? DO WE NEED A ROAD ON EVERY RIDGE FOR FIRE SUPPPESSION? IN SHORT, I FEEL THERE IS ALREADY A SUFFICIENT AMOUNT OF KNOWLEDGE ON FIRE ECOLOGY TO CHANGE SOME OF THE PRACTICES AND BENEFIT WHOLE ECOSYSTEMS BUT IN THE END IT APPEARS THE DOLLAR AND THE FOUR WHEEL DRIVE PUBLIC IS DICTATING POLICY. ECONOMIC EFFECTS,FIRE EXCLUSION,WILDLIFE,HUMAN DISTURBANCE,PUBLIC REACTION,FIRE EFFECTS

137. 01 643 A 14,000 ACRE WILDLIFE-RECREATION AREA IN NORTH CENTRAL WASHINGTON IS MANAGED PRIMARILY AS A MULE DEER WINTER RANGE. MOST OF THE AREA IS A PONDEROSA PINE-BITTERBRUSH CLIMAX ASSOCIATION. CAN FIRE BE USED TO INCREASE RANGE PRODUCTION FOR DEER? WHAT EFFECT DOES FIRE HAVE ON SOIL MOISTURE CONTENT IN A 10-14 INCH RAINFALL AREA?
MICROCLIMATE,RECREATION,WILDLIFE,SHRUBLAND,GAME ANIMAL,FIRE EFFECTS,SOIL-WATER RELATIONS

138. 01 643 WHAT EFFECTS DOES FIRE HAVE ON MATURE BITTERBRUSH (PURSHIA TRIDENTATA) WHEN LOW INTENSITY GROUND FIRE CONTROLLED BURNING IS DONE IN THE FALL? FIRE EFFECTS,SHRUBLAND,TIMING,PRESCRIBED FIRE,FIRE INTENSITY

139. 01 643 WHAT EFFECTS WOULD FIRE HAVE ON OVERGRAZED OR IMPROPERLY GRAZED RANGELANDS IN A PONDEROSA PINE CLIMAX AREA? GRASSLAND,FIRE EFFECTS

140. 01 644 IN AN AREA WHERE FIRE WILL STIMULATE SHRUBS OR REGROWTH ON OLD PLANTS, WHAT IS THE OPTIMUM SIZE AND SHAPE OF BURNS THAT WILL BENEFIT WILDLIFE?
WILDLIFE,FIRE EFFECTS,AREA SIZE,PRODUCTIVITY,SHRUB UNDERSTORY

141. 01 644 WHAT ARE THE PARAMETERS FOR PREDICTING SPROUTING OF FIRE-INDUCED BROWSE PLANTS? PRODUCTIVITY,ORGAN,FIRE EFFECTS,SHRUB UNDERSTORY,SHRUBLAND

142. 01 644 WHAT CHANGES IN SPECIES COMPOSITION WILL TAKE PLACE IN GROUND AND SHRUB LAYERS WITH DIFFERENT FIRE INTENSITIES? FIRE INTENSITY,FIRE EFFECTS,SPECIES DIVERSITY,SHRUB UNDERSTORY,SUCCESSION

143. 01 644 WHAT EFFECT DOES FIRE INTENSITY HAVE ON NUTRIENT CONTENT OF RESPROUTING SHRUBS, AND WHAT IS THE CHANGE IN PRODUCTION OF SHOOTS BY LENGTH, NUMBER, OR DRY WEIGHT?
FIRE INTENSITY,FIRE EFFECTS,NUTRIENTS,SHRUB UNDERSTORY,PRODUCTIVITY,ORGAN

144. 01 644 WHAT IS THE SUCCESSIONAL PATTERN OF GROUND COVER PLANTS OF VARIOUS TYPES WITHIN THE CONIFEROUS FOREST BIOME? SUCCESSION,COMMUNITY,CONIFEROUS FOREST,FIRE EFFECTS

145. 01 644 WHAT IS THE SUCCESSIONAL PATTERN OF WILDLIFE RE-INVASION AND USE OF BURNED AREAS ON LARGE SCALE BURNS? AREA SIZE,FIRE EFFECTS,SUCCESSION,WILDLIFE

146. 01 715 FREQUENTLY A "NURSE CROP" IS AERIAL SEEDED SOON AFTER FIRE MOP-UP AND BEFORE REFORESTATION. HOW OFTEN IS THIS NURSE CROP EFFECTIVE IN DOING THE JOB INTENDED AND HOW OFTEN DOES IT BACKFIRE BY OFFERING TOO MUCH COMPETITION AND ADDING TOO MUCH FLASH FUEL TO THE SITE? MANIPULATION
COMPARISON,COMPETITION,REPRODUCTION,SEED,SOIL EROSION

147. 01 715 HOW DOES THE PROTEIN CONTENT OF SHRUBS ON REGENERATED BURNED AREAS COMPARE TO THOSE IN UNBURNED AREAS? THE CARBOHYDRATE CONTENT? DOES INTENSITY OF BURN HAVE A BEARING ON THIS? COMPOUNDS,NUTRIENTS,FIRE INTENSITY,FIRE EFFECTS,REPRODUCTION,PRODUCTIVITY

148. 01 715 TO WHAT EXTENT DO STREAM-SIDE FIRES CHANGE THE CHEMICAL COMPOSITION OF A STREAM? DOES INTENSITY OF BURN HAVE A BEARING ON THIS AND FOR HOW LONG?
STREAM,NUTRIENTS,FIRE INTENSITY,FIRE EFFECTS

149. 01 715 WHAT ARE THE BENEFICIAL ASPECTS, IF ANY, OF A "NORMAL" FIRE CLIMAX FOREST IN THE INLAND EMPIRE REGION?
SUCCESSION,FIRE EFFECTS,ECOSYSTEM

150. 01 715 WHAT EFFECT DOES FIRE HAVE ON AQUATIC INSECTS? ARE SOME INSECTS MORE RESISTANT TO HABITAT CHANGE CAUSED BY FIRE THAN OTHERS? STREAM,INSECT,FIRE EFFECTS,COMMUNITY

151. 01 739 HOW CAN WE DEVISE A FIRE INFORMATION BASE THAT WILL HELP LAND MANAGERS BECOME UPDATED ON THE LATEST RELEVANT RESEARCH RESULTS AND NEEDS? FIRE EFFECTS

152. 01 740 WHAT VOLUME OF MERCHANTABLE TIMBER HAS BEEN LOST DUE TO EXCESSIVE COMPETITION FROM BRUSH SPECIES RESULTING FROM THE ACTIVE EXCLUSION OF FIRES IN FORESTS?
PRODUCTIVITY,FIRE EXCLUSION,CONIFEROUS FOREST,COMPETITION,SHRUB UNDERSTORY

153. 01 741 MAJOR FOREST LAND MANAGEMENT AGENCIES ARE DISPOSING OF OLD GROWTH LOGGING SLASH BY BURNING UNDER THE ADDITIONAL CONSTRAINTS OF AIR POLLUTION REGULATIONS. WHAT IS THE EFFECT OF THESE CONSTRAINTS IN TERMS OF: A) ADDITIONAL SLASH DISPOSAL COSTS? B) ACREAGE OF SLASH UNBURNED DUE TO POLLUTION CONSTRAINTS? C) ACREAGE OF WILDFIRES AND SUPPRESSION COSTS RESULTING FROM BURNING SLASH WHEN AIR POLLUTION FACTORS ARE OPTIMUM BUT BURNING CONDITIONS FROM THE STANDPOINT OF CONTROL ARE NOT OPTIMUM? ECONOMIC EFFECTS,PRESCRIBED FIRE,FUEL REDUCTION, AIR POLLUTION,MICROCLIMATE,FIRE EFFECTS,PRESCRIBED FIRE

154. 01 741 ONE AGENCY ON MAJOR "EASTSIDE" FORESTS IN OREGON AND WASHINGTON IS STILL BURNING LARGE ACREAGES OF OLD GROWTH LOGGING SLASH IN PARTIAL CUT STANDS. OTHER AGENCIES MANAGING SIMILAR "EASTSIDE" FORESTS AND

PRACTICING SIMILAR CUTTING TREATMENTS ARE NOT. WHAT ARE THE EFFECTS OF THESE PRACTICES ON THE RATE OF SPREAD, RESISTANCE TO CONTROL OF WILDFIRE, AND SUPPRESSION COSTS ON THE RESPECTIVE AREAS? ECONOMIC EFFECTS,PRESCRIBED FIRE,FUEL REDUCTION,AREA SIZE,FIRE BEHAVIOR

155. 01 837 COULD LOGGING SLASH BE TREATED WITH SOMETHING THAT WOULD SPEED UP THE DECAY PROCESSES? HUMAN DISTURBANCE,DECOMPOSITION,FUEL REDUCTION

156. 01 837 DO YOU THINK THERE MIGHT BE A WAY TO AERIALLY TREAT SMOKE FROM A SLASH BURN TO MAKE IT SETTLE OUT FROM THE AIR SOONER, BEFORE IT DRIFTS TO AN AREA WHERE IT IS NOT WANTED? SMOKE EFFECTS,AIR POLLUTION,GENERAL FIRE MANAGEMENT,PUBLIC REACTION,PRESCRIBED FIRE,FUEL REDUCTION

157. 01 837 IN LOG STORAGE AREAS, OR IN A HEAVY SLASH AREA, WHEN A FIRE BURNS IN THIS SITUATION, HOW MUCH DAMAGE OCCURS TO THE SOIL, AND WHAT IS THE LASTING EFFECT, IF ANY? HUMAN DISTURBANCE,SOIL,FIRE EFFECTS,TIMING,PRESCRIBED FIRE

158. 01 837 IS IT POSSIBLE TO AERIALLY TREAT A SNAG AREA TO SPEED UP THE DECAY SO THEY WILL COME DOWN IN CHUNKS, INSTEAD OF ALL AT ONCE, AS THEY DO WHEN YOU FALL THEM? THIS QUESTION CONCERNS DOUGLAS FIR SNAGS. SNAG,HUMAN DISTURBANCE,DECOMPOSITION,CONIFEROUS FOREST,POPULATION,EXPERIMENT ORIENTED QUESTION

159. 01 837 WITH 180 TO 200 TONS OF SLASH PER ACRE AND A FALL SLASH BURN IS MADE, HOW MUCH SOIL DAMAGE TAKES PLACE? HOW MUCH OF THE SOIL NUTRIENTS ARE ADDED BACK TO THE SOIL BY THE WOOD ASH? ASH,FIRE INTENSITY,FIRE EFFECTS,SOIL,NUTRIENTS,PRESCRIBED FIRE,FUEL REDUCTION

160. 02 0000 CAN REPEATED FIRE EVENTUALLY LIMIT DESIRABLE BIG GAME BROWSE SPECIES SUCH AS REDSTEM CEANOTHUS? IF SO, HOW MUCH AND UNDER WHAT CONDITIONS? PRESCRIBED FIRE,FIRE FREQUENCY,SUCCESSION,SHRUBLAND,REPRODUCTION

161. 02 0000 IN THE IDAHO BATHOLITH, COMPARE THE EFFECTS OF SPRING (APRIL-MAY) BURNING SERAL BRUSHFIELDS ON SOIL, VEGETATION, WATER YIELDS AND QUALITY WITH SIMILAR EFFECTS OF: WILDFIRE IN MATURE FORESTS (WILDFIRE) BROADCAST BURNS FOR SLASH DISPOSAL, DOZER-PILED BURNS FOR SLASH DISPOSAL. HOW DO THESE EFFECTS CHANGE WITH SEASON OF BURNING? PRESCRIBED FIRE,SHRUBLAND,MANIPULATION COMPARISON,SOIL,VEGETATION,HYDROLOGY, FUEL REDUCTION

162. 02 0000 UNDER WHAT CONDITIONS IN THE IDAHO BATHOLITH DOES FIRE SIGNIFICANTLY INCREASE EROSION PROBABILITY? MASS FAILURE PROBABILITY? SOIL EROSION

163. 02 0000 WHAT ARE THE EXPECTED LONG-TERM EFFECTS OF REPEATED FIRE (FOR EXAMPLE AT INTERVALS OF 10, 20, 30 YEARS) ON THE GRANITIC SOILS, VEGETATION, WATER YIELD AND QUALITY IN THE IDAHO BATHOLITH? AT WHAT INTERVALS CAN BRUSHFIELDS BE REBURNED SAFELY FOR INCREASED BROWSE PRODUCTION IN THE IDAHO BATHOLITH? PRESCRIBED FIRE,FIRE FREQUENCY,SOIL STRUCTURE,SOIL EROSION

164. 02 129 DOES A UNIT WATERSHED HAVE CRITICAL AREAS WITH RESPECT TO FIRE DAMAGE? WATERSHED,AREA SIZE,MOSAIC,HYDROLOGY

165. 02 129 IS GROUND-COVER DAMAGE RELATED TO RATE OF FIRE SPREAD? FIRE BEHAVIOR,FUEL REDUCTION,FUEL/BIOMASS ACCUMULATION

166. 02 129 IS THERE A RELATION BETWEEN SOIL DEPTH AND GROUND-COVER DAMAGE FROM FIRES? SOIL,FUEL REDUCTION

167. 02 129 UNDER WHAT TOPOGRAPHIC CONDITIONS WILL SOIL DAMAGE FROM SUPPRESSION ACTIVITIES EXCEED DAMAGE FROM FIRE ALONE? MANIPULATION COMPARISON,GENERAL FIRE MANAGEMENT,FUEL REDUCTION,SOIL EROSION

168. 02 129 WHAT DEGREE OF ACCELERATED EROSION CAN BE EXPECTED AFTER FIRES OF DIFFERENT INTENSITY? FIRE INTENSITY,FUEL REDUCTION,SOIL EROSION

169. 02 130 WHAT ARE THE DIFFERENCES IN LITTER DECOMPOSITION AND ACCUMULATION RATES (BY KIND OF LITTER MATERIAL) BETWEEN BURNED-OVER SITES AND AREAS FROM WHICH FIRE WAS EXCLUDED? WHAT SPECIFIC DECOMPOSER ORGANISMS ARE INVOLVED? HOW DO THE DIFFERENCES IN RATES CHANGE WITH HABITAT TYPE, SPECIES COMPOSITION,STAND AGE, DENSITY, ETC.? HOW DOES FERTILIZATION (ESPECIALLY WITH N AND CA) AFFECT LITTER ACCUMULATION (NET) UNDER UNDISTURBED STANDS? MANIPULATION COMPARISON,FIRE EXCLUSION,LITTER,DECOMPOSITION,FUEL/BIOMASS ACCUMULATION,MICROORGANISM,SPECIES DIVERSITY,DENSITY,AGE,NUTRIENTS

170. 02 130 WHAT ARE THE POSSIBILITIES FOR DEVELOPMENT OF FIRE MEASUREMENT METHODS THAT CAN BE MORE EFFECTIVELY RELATED TO ECOLOGICAL EFFECTS AND SUBSEQUENT APPLICATIONS? GENERAL FIRE MANAGEMENT

171. 02 130 WHAT ARE THE RATES OF SLASH DETERIORATION (AND FIRE HAZARD REDUCTION) IN THINNED YOUNG STANDS AND PARTIALLY CUT OLDER STANDS? HOW ARE THESE AFFECTED BY HABITAT TYPE, SPECIES COMPOSITION,STAND AGE, DENSITY, THINNING INTENSITY, FERTILIZATION, SUPPLEMENTARY LOPPING AND SCATTERING, ETC.? ALSO, HOW ARE THESE RATES RELATED TO POTENTIALS FOR BUILDUP OF INSECTS AND DISEASES HARMFUL TO THE RESIDUAL STAND? HOW DO CHEMICALLY THINNED STANDS DIFFER IN FIRE SUSCEPTIBILITY AND DIFFICULTY OF FIRE CONTROL, FROM STANDS THINNED BY CUTTING? FUEL/BIOMASS ACCUMULATION,AGE,SPECIES DIVERSITY,DENSITY,NUTRIENTS,INSECT, DISEASE, FLAMMABILITY, MANIPULATION COMPARISON

172. 02 131 FIRE PREVENTION SINCE THE EARLY 1900'S HAS ALTERED THE FREQUENCY, INTENSITY, AND EXTENT OF FIRES IN WESTERN FORESTS. WHAT ARE THE ECOLOGICAL CONSEQUENCES OF THIS PROTECTION IN TERMS OF: (1) ALTERING THE RELATIVE PROPORTIONS OF SERAL AND CLIMAX VEGETATIVE CONDITIONS: (2) CHANGING THE RATES OF NUTRIENT CYCLING: (3) AFFECTING RATES OF ROCK WEATHERING AND SOIL FORMATION? FIRE FREQUENCY,FIRE INTENSITY,AREA SIZE,SUCCESSION,NUTRIENTS,SOIL

173. 02 131 INTENSIVE FOREST MANAGEMENT METHODS AND GOALS SUGGEST INCREASED SPACING BETWEEN TREES (I.E. FEWER TREES/ACRES), FASTER TREE GROWTH RATES, LESS FUEL PER ACRE, FREQUENT REENTRY INTO THE STANDS FOR LIGHT THINNING AND/OR HARVEST WITH LIGHT SLASH DEVELOPED. - WHAT EFFECT WOULD THIS SYSTEM OF MANAGEMENT HAVE ON: (1) FIRE SUPPRESSION ORGANIZATIONS AND PRACTICES: (2) NUTRIENT CYCLING WHEN COMPARED WITH (A) FREQUENT NATURAL AND UNCONTROLLED FIRE OCCURRENCE AND, (B) SUCCESSFUL FIRE PREVENTION AND/OR EARLY SUCCESSFUL SUPPRESSTON ACTION? MANIPULATION COMPARISON,NUTRIENTS,FIRE FREQUENCY,FIRE EXCLUSION,PRODUCTIVITY,FUEL/BIOMASS ACCUMULATION

174. 02 133 DO FIRES OF VARYING INTENSITIES REDUCE THE INOCULUM OF ANY OF THE TREE OR SHRUB ROOT DISEASES? FIRE INTENSITY,ROOTS,DISEASE

175. 02 133 GIVEN POORLY, MODERATELY AND FULLY STOCKED STANDS, WHICH ARE MOST LIKELY TO BURN CLEANLY (OR CONVERSELY LEAVE SOME LIVING RESIDUALS) OVER THE RANGE OF POOR TO EXCELLENT SITES? E.G., DO POORLY STOCKED STANDS ON GOOD SITES BURN (OR WITH HIGHER PROBABILITY) MORE CLEANLY THAN DO SIMILARLY STOCKED STANDS ON POOR SITES, GIVEN EQUAL FIRE SITUATIONS? WHAT TYPE OF STAND, IF ANY, IS MOST LIKELY TO BE "FIRE-RESISTANT" ON ANY GIVEN SLOPE WITH ANY GIVEN FIRE FRONT? FIRE BEHAVIOR,POPULATION,DENSITY

176. 02 134 HOW SIGNIFICANT ARE VARIOUS INTENSITIES OF INSECT DEFOLIATION, OR TREE KILLING, IN INCREASING FIRE INTENSITY AND RATE OF SPREAD? INSECT,MORTALITY,FUEL/BIOMASS ACCUMULATION,FIRE BEHAVIOR

177. 02 134 A NUMBER OF DESTRUCTIVE AND BENEFICIAL INSECTS SPEND A PORTION OF THEIR LIFE, PARTICULARLY THE OVERWINTERING STAGES, IN THE DUFF. WHAT IS THE EFFECT OF CHANGES IN LITTER ACCUMULATION ON SURVIVAL AND DISTRIBUTION OF INSECTS THAT OVERWINTER IN THE DUFF? LITTER,FUEL/BIOMASS ACCUMULATION,FUEL REDUCTION,INSECT

178. 02 134 TREES STRUCK BY LIGHTNING OR WEAKENED BY FIRE ARE ATTRACTIVE TO BARK BEETLES , IMPORTANT TREE KILLERS. IN WHAT MANNER IS THE PHYSIOLOGY OF LIGHTNING STRUCK TREES CHANGED TO INCREASE THEIR ATTRACTIVENESS, OR REDUCE THEIR RESISTANCE, TO INFESTATION BY BARK BEETLES? LIGHTNING EFFECTS,INSECT,,EXPERIMENT ORIENTED QUESTION

179. 02 134 WHAT IS THE EFFECT OF INCREASING AREA SIZE OF EVEN -AGED TREES, AS RELATED TO THE PROBABILITY OF VARIOUS DENSITY LEVELS OF BARK BEETLE POPULATION? AREA SIZE,AGE,DENSITY,INSECT,POPULATION

180. 02 135 IN THE CONTROLLED BURNING OF AN AREA TO IMPROVE GAME RANGE, IS IT POSSIBLE TO SO TIME THE OPERATION SEASONALLY THAT A MAJOR REDUCTION IN THE WOODTICK POPULATION WOULD RESULT? PRESCRIBED FIRE,TIMING,INSECT,POPULATION

181. 02 136 DOES BURNING AFFECT THE RATE OF SOIL FORMATION DIFFERENTLY ON VARICUS ASPECTS AND SLOPES? DOES BURNING AFFECT THE RATE OF SOIL FORMATICN DIFFERENTLY UNDER CONIFER STANDS THAN UNDER BROADLEAVED SPECIES? DOES BURNING AFFECT THE RATE OF SOIL FORMATION THROUGH MICROFLORAL INTERMEDIARIES? SCIL STRUCTURE,SOIL-WATER RELATIONS,SOIL EROSION

182. 02 227 DO REPEATED BURNS TEND TO INFLUENCE THE SPECIES COMPOSITION OF THE SUBSEQUENT PLANT COMMUNITIES IN CONIFEROUS FORESTED AREAS AS FOUND IN NORTH CENTRAL IDAHO? FIRE FREQUENCY,SPECIES DIVERSITY

183. 02 227 HOW CAN FIRE BE USED MOST EFFECTIVELY IN MAINTAINING A SERAL DECIDUOUS PLANT COMMUNITY AT A SERAL STAGE MOST SUITABLE FOR MULE DEER AND ELK IN CONIFEROUS FORESTED AREAS AS FOUND IN NORTH CENTRAL IDAHO? SUCCESSION,GAME ANIMAL

184. 02 227 IS THE CREATION OF BRACKEN FERN STANDS RELATED TO THE DESTRUCTION OF THE "A"SOIL HORIZON BY FIRE? FIRE EFFECTS,FERN,SOIL

185. 02 227 WHAT AMOUNT OF GROUND CCVER FUEL SUPPLY IS NEEDED TO CREATE THE TYPE FIRE NEEDED TO ORTAIN AN OPTIMUM DECICUOUS SHRUB PLANT COMMUNITY FOR MULE DEER AND ELK IN TERMS OF PLANT SPECIES DENSITY, DISPERSION, AND COMPOSITION? --COULD A TOO LARGE FUEL SUPPLY ADVERSELY AFFECT THE ESTABLISHMENT OF SUCH A SERAL PLANT COMMUNITY, AND AT WHAT FUEL SUPPLY LEVEL WOULD THIS BE REACHED? SPECIES DIVERSITY,DISPERSICN,FUEL/BIOMASS ACCUMULATION,SHRUBLAND,GAME ANIMAL,FIRE INTENSITY,REPRODUCTION

186. 02 227 WHAT EFFECT DO REPEATED BURNS IN AN AREA HAVE ON THE SEED SOURCE OF SUCH SPECIES AS WILLOW AND REDSTEM CEANOTHUS? FIRE FREQUENCY,SEED

187. 02 227 WHAT EFFECT DC VARIOUS SIZES AND TIMING OF BURNS HAVE ON THE GROWTH CHARACTERISTICS OF THE SUBSEQUENT STAGES OF THE DECIDUOUS SHRUB PLANT COMMUNITIES IN THE CONIFEROUS FORESTS OF NORTHERN IDAHO? AREA SIZE,FIRE FREQUENCY,SHRUBLAND,POPULATION GROWTH,FUEL/BIOMASS ACCUMULATICN

188. 02 405 TO WHAT DEGREE OF RELIABILITY CAN FIRE FREQUENCY AND INTENSITY BE PREDICTED VIA AN IN-DEPTH ANALYSIS OF AN AREA'S FIRE HISTORY? FIRE HISTORY,FIRE FREQUENCY,MODEL

189. 02 405 WHAT SMALL ANIMAL AND BIRD POPULATIONS ARE MOST AFFECTED AND IN WHAT WAYS FOLLOWING LARGE INTENSE BURNS? SMALL MAMMAL,BIRD,COMMUNITY,FIRE EFFECTS,FIRE INTENSITY

190. 02 407 ARE THE HIGH SUBALPINE-AREA FIRES ESSENTIAL IN MAINTAINING BIGHORN AND MOUNTAIN GOAT SUMMER RANGES? GAME ANIMAL,FIRE EFFECTS,MOUNTAIN

191. 02 407 ARE THE SUCCESSIONAL STAGES OF LONGER DURATION FOLLOWING A RETURN? HOW IS THIS AFFECTED BY THE LENGTH OF TIME BETWEEN BURNS? FIRE FREQUENCY,SUCCESSION,TIMING,FIRE EFFECTS

192. 02 407 CAN A RELATIONSHIP BE ESTABLISHED BETWEEN FIRE OCCURRENCE AND INSECT EPIDEMICS IN WILDERNESS? THAT IS, DO LARGE FIRES HELP PREVENT INSECT EPIDEMICS? IS IT A CASE OF SUCCESSFUL FIRE SUPPRESSION ONLY MEANS THAT THE BUGS WILL TAKE THE TIMBER? FIRE EXCLUSION,FIRE EFFECTS,INSECT,AREA SIZE

193. 02 407 CAN SUCCESSION BE ACCURATELY PREDICTED FOLLOWING FIRE WITHIN ALL HABITAT TYPES AND AT ALL SUCCESSIONAL STAGES WITHIN THESE TYPES? SUCCESSION,MODEL,FIRE EFFECTS,ECOSYSTEM

194. 02 407 DOES THE SEASON OF BURNING GREATLY INFLUENCE THE EFFECT OF FIRE ON VEGETATION? DOES THE PHYSIOLOGICAL STAGE OF THE VEGETATION GREATLY INFLUENCE THE EFFECTS OF FIRE? FIRE EFFECTS,TIMING,COMMUNITY

195. 02 407 WHAT ARE THE CHEMICAL CHANGES IN LAKES AND STREAMS FOLLOWING BURNING? FIRE EFFECTS,LAKE,STREAM,NUTRIENTS

196. 02 407 WHAT ARE THE EFFECTS OF FIRE RETARDANT ON VEGETATION? CHEMICAL RETARDANT EFFECTS,VEGETATION

197. 02 407 WHAT IS THE EFFECT OF DIFFERENT WINDFALL DENSITY ON BIG GAME POPULATIONS? HOW IS WINDFALL DENSITY AFFECTED BY BURNING OR NOT BURNING? WINDFALL INCREASES WITH OVERMATURE STANDS OF TIMBER, BUT IT IS ALSO INCREASED BY SNAGS GOING OVER FOLLOWING A FIRE. GAME ANIMAL,FIRE EFFECTS,SNAG,WINDTHROW,WILDLIFE

198. 02 407 WHAT IS THE EFFECT OF FIRE ON MIGRATORY WILDLIFE SUCH AS BIRDS? DO POPULATIONS PRESENT PRECEDING FIRE RELOCATE AFTER BURNING IF CONDITIONS ARE NO LONGER SUITABLE FOR THEM? DO POPULATIONS MIGRATING THROUGH THE AREA STOP AS THEY FIND SUITABLE CONDITIONS? DO LARGE BURNS AFFECT THE MIGRATION ROUTES OF SMALL BIRDS? ANIMAL BEHAVIOR,BIRD,FIRE EFFECTS

199. 02 407 WHAT IS THE EFFECT OF FIRE RETARDANT ON AQUATIC LIFE IN STREAMS AND LAKES? DO TOLERANCE LEVELS VARY WITH DIFFERENT LAKES AND STREAMS? CAN THIS BE FORSEEN AND ALLOWED FOR? CHEMICAL RETARDANT EFFECTS,STREAM,LAKE,FISH,MODEL

200. 02 407 WHY DOES BITTERBRUSH (PURSHIA TRIDENTATA) RESPROUT FOLLOWING BURNING IN SOME INSTANCES AND NOT IN OTHERS? FIRE EFFECTS,REPRODUCTION,POPULATION GROWTH,SHRUB UNDERSTORY

201. 02 407 WILL FIRE CONTROL IN WILDERNESS AREAS RESULT IN LARGER AND MORE DISASTROUS FIRES IN THE FUTURE? FIRE EXCLUSION,AREA SIZE

202. 02 408 WHAT ARE ACTUAL EFFECTS OF PREVENTING, OR CONTROLLING AT CLASS A SIZE, NATURAL (LIGHTNING) FIRES ON PLANT AND ANIMAL SUCCESSION? LIGHTNING-CAUSED FIRE,AREA SIZE,SUCCESSION,VEGETATION,WILDLIFE,FIRE EXCLUSION

203. 02 409 SOMETIMES CONIFER SEEDLINGS PLANTED IN DEEP ASH BEDS WHERE HEAVY SLASH PILES ON WINDROWS WERE BURNED SHOW ACCELERATED EARLY GROWTH. IS THIS A SHORT TERM EFFECT, OR DO SUCH TREES REMAIN DOMINANT THROUGHOUT THE ROTATION? ASH,NUTRIENTS,REPRODUCTION,CONIFEROUS FOREST,FUEL REDUCTION,CHARCOAL,PRODUCTIVITY,PRESCRIBED FIRE,FIRE EFFECTS,EXPERIMENT ORIENTED QUESTION,POPULATION

204. 02 411 AT WHAT FREQUENCY CAN BROWSE BURNING ON KEY WINTER RANGE BE MADE WITHOUT CAUSING IRREVERSIBLE DAMAGE TO THE IMMEDIATE ENVIRONMENT? SHRUBLAND,WILDLIFE,PRESCRIBED FIRE,TIMING,FIRE FREQUENCY,FIRE EFFECTS

205. 02 411 HOW MUCH OF A TWO TO THREE INCH DUFF LAYER SHOULD BE REMOVED IN A BROADCAST BURN? UNDER WHAT CONDITIONS COULD SUCH REMOVAL BE OBTAINED? AT WHAT POINT WILL DUFF REMOVAL BY BROADCAST BURNING ADVERSELY AFFECT THE MICROCLIMATE OF THAT AREA AND WHAT IMPACT WOULD THAT HAVE ON THE OVERALL ENVIRONMENT OF THE AREA? FUEL REDUCTION,PRESCRIBED FIRE,DUFF,MICROCLIMATE,ECOSYSTEM

206. 02 411 IN A SHELTERWOOD, SELECTION OR OVERSTORY REMOVAL TYPE HARVEST, HOW MUCH, IF ANY, SLASH SHOULD BE LEFT IN THE AREA IN ORDER TO MAINTAIN THE NUTRIENT CYCLE WHEN "YARDING THE UNMERCHANTABLE TIMBER AND TOPS" IS A PART OF THE TREATMENT PRESCRIPTION? HUMAN DISTURBANCE,NUTRIENTS,FUEL REDUCTION,MANIPULATION COMPARISON

207. 02 411 IN THE PACIFIC NORTHWEST,HOW MANY YEARS ARE REQUIRED FOR FUELS ONE INCH AND UNDER TO DECOMPOSE TO THE POINT WHERE THEY CAN BE CONSIDERED PART OF THE DUFF LAYER? DUFF,DECOMPOSITION,CLIMATE,TIMING,ORGANISM

208. 02 411 IN VIEW OF THE FACT THAT A PUBLIC CRY IS BEING RAISED AGAINST PRESCRIBED FIRE, WHAT KIND OF FIRELESS FUEL MANAGEMENT IN RELATION TO TIMBER HARVESTING CAN BE EMPLOYED TO SIMULATE THE NATURAL ROLE OF FIRE? FIRE EXCLUSION,PRESCRIBED FIRE,MANIPULATION COMPARISON,PUBLIC REACTION,AIR POLLUTION,AESTHETICS,VALUE JUDGEMENT

209. 02 411 IS THE RESIDUE (ON LAYDOWN TREES) IN A PRECOMMERCIAL THINNING DETRIMENTAL TO SOIL CHEMISTRY? OR HOW MUCH LAYDOWN CAN BE TOLERATED BEFORE SOIL CHEMISTRY IS AFFECTED? NUTRIENTS,SOIL,HUMAN DISTURBANCE,FUEL/BIOMASS ACCUMULATION,DECOMPOSITION

210. 02 411 TO WHAT EXTENT DOES BROADCAST BURNING AFFECT THE PH OF ADJACENT STREAMS AND SOILS WITHIN THE BURN? PRESCRIBED FIRE,FIRE EFFECTS,PH,STREAM,SOIL,EXPERIMENT ORIENTED QUESTION

211. 02 411 WHAT ARE THE EFFECTS OF DOZER PILING ON SOIL COMPACTION AND PERMEABILITY? WHAT IS THE EFFECT OF COMPLETE DUFF REMOVAL ON THESE AREAS IN REGARDS TO SOIL FERTILITY OR NUTRIENT RECYCLING? AT PRESENT WE ARE REQUIRING 75% SOIL SCARIFICATION TO OBTAIN SEED BED PREPARATION. WOULD WE BE BETTER OFF TO REQUIRE LESS SCARIFICATION, FORGET ABOUT SEED TREE REGENERATION AND SPOT SCALP THE DUFF LAYER (2" AVERAGE) DURING A PLANTING OPERATION? SOIL STRUCTURE,PLANTING,HUMAN DISTURBANCE,MANIPULATION COMPARISON,NUTRIENTS,SEED,REPRODUCTION,DUFF

212. 02 411 WHAT IS THE BEST TIME TO PLANT AFTER A BROADCAST BURN? HOW DOES BURNING AFFECT SOIL MOISTURE DURING THE FIRST SUMMER AFTER BURNING? DOES THE BLACK SURFACE ABSORB MORE SOLAR HEAT AND THUS DRY OUT TO A DEPTH WHICH MIGHT CAUSE PLANTATIONS TO FAIL? MICROCLIMATE,CHARCOAL,ASH,SOIL-WATER RELATIONS,FIRE EFFECTS,PRESCRIBED FIRE,FUEL REDUCTION,PLANTING,TIMING,ECOSYSTEM

213. 02 413 WHAT IS THE COST/BENEFIT RATIO OF PERMITTING FIRE TO PLAY A NATURAL ROLE IF FIRE REACHES A POINT WHERE IT MUST BE SUPPRESSED? WHAT ARE SOCIO-ECONOMIC BENEFITS AND LOSSES? VALUE JUDGEMENT,FIRE EFFECTS,ECONOMIC EFFECTS,AESTHETICS,PUBLIC REACTION

214. 02 417 AT WHAT TEMPERATURES AND TEMPERATURE DURATION ARE SOIL MICROORGANISMS DECREASED TO A POINT TO PRECLUDE NATURAL TIMBER REGENERATION? CAN THIS BE RELATED TO DEAD FUEL DENSITIES ON A BASIS OF TONS PER ACRE PER SLOPE DEGREE? SOIL,MICROORGANISM,HEAT EFFECTS,FIRE EFFECTS,FUEL/BIOMASS ACCUMULATION,REPRODUCTION,TOPOGRAPHY

215. 02 417 FIRE OR HIGH TEMPERATURES ARE NECESSARY TO OPEN SEROTINOUS PINE CONES. AT WHAT TEMPERATURES ARE SEEDS DEHYDRATED OR OTHERWISE DAMAGED TO AN EXTENT TO PRECLUDE GERMINATION OR SURVIVAL OF GERMINANTS? OR DOES THIS OCCUR? CONIFEROUS FOREST,SEED,HEAT EFFECTS,FIRE EFFECTS,ORGAN

216. 02 417 IS THERE A POINT OF SOIL DAMAGE FROM FIRE WHERE LODGEPOLE PINE AND/OR DOUGLAS-FIR REGENERATION IS PRECLUDED BUT SOIL STABILIZATION WITH OTHER SPECIES CAN BE EXPECTED? THIS MAY BE IMPORTANT IN DETERMINING TIME LOSS IN PRODUCTIVITY OF TIMBER STAND WHILE NATURAL ECOLOGICAL SUCCESSION OCCURS. SUCCESSION,SOIL,HEAT EFFECTS,REPRODUCTION,CONIFEROUS FOREST,SOIL EROSION,PRODUCTIVITY,FIRE EFFECTS

217. 02 417 IT IS GENERALLY BELIEVED THAT LODGEPOLE PINE IS A FIRE CLIMAX SPECIES. HOWEVER, CONSIDERABLE ACREAGE IS OCCUPIED SOLELY BY THIS SPECIES WITH NO INVASION BY SPRUCE OR FIR. IS THIS RELATED TO INTENSITY OR FREQUENCY OF FIRE OR BOTH? OR, IS THE BASIC ECOLOGICAL CONCEPT IN ERROR? CONIFEROUS FOREST,SUCCESSION,COMPETITION,FIRE INTENSITY,FIRE FREQUENCY,POPULATION

218. 02 417 RECOGNIZING THAT SOMETIMES FIRE RESULTS IN SOIL LOSS AND RESULTANT DEGRADATION OF STREAM CHANNEL QUALITY, WHAT TIME FRAME CAN BE EXPECTED TO NATURALLY RESTORE STREAM REGIMEN TO A LEVEL TO SUPPORT FISHERIES AFTER THE WATERSHED HAS BEEN STABILIZED? CAN THIS BE ARTIFICIALLY REGENERATED THROUGH THE INTRODUCTION OF FERTILIZERS, MICROORGANISMS AND AQUATIC BIOTA? STREAM,FIRE EFFECTS,FISH,SOIL EROSION,TIMING,WATERSHED,NUTRIENTS,MICROORGANISM,ECOSYSTEM

219. 02 421 WHEN, WHERE, AND HOW CAN WE BEST USE FIRE TO RECLAIM FOREST OPENINGS INVADED BY CONIFERS IN THE ABSENCE OF FIRE, THEREBY IMPROVING WILDLIFE HABITAT IN THE NORTHERN ROCKY MOUNTAINS? COMPETITION,FIRE EXCLUSION,SPECIES DIVERSITY,WILDLIFE,SUCCESSION,COMMUNITY,PRESCRIBED FIRE,MOSAIC

220. 02 423 WHEN PREPARING A LODGEPOLE CLEARCUT UNIT FOR SLASH DISPOSAL WHERE CONE SEROTINY IS KNOWN TO EXIST, IS IT BETTER TO BROADCAST BURN OR WINDROW AND BURN THE SLASH? WILL EITHER RESULT IN BETTER REGENERATION OF SEEDLINGS? SEED,ORGAN,HUMAN DISTURBANCE,PRESCRIBED FIRE,FUEL REDUCTION,REPRODUCTION,CONIFEROUS FOREST

221. 02 428 WHAT IS A PRACTICAL AND ECONOMICAL MEANS OF ALLEVIATING THE NEGATIVE EFFECTS OF DEEP ASH BEDS IN OBTAINING NATURAL AND/OR ARTIFICIAL REGENERATION OF DOUGLAS-FIR IN THE INLAND EMPIRE? ASH,REPRODUCTION,FUEL REDUCTION,PLANTING,CONIFEROUS FOREST

222. 02 523 DOES LOGGING AND BURNING THE SLASH RESULT IN SIGNIFICANTLY LESS SOIL FERTILITY AND LOSS OF NUTRIENTS COMPARED TO AN AREA THAT HAS BEEN COMPLETELY BURNED? CAN NUTRIENTS LOST BECAUSE OF TIMBER REMOVAL BE REPLACED CHEAPLY BY APPLICATION OF COMMERCIAL FERTILIZER? MANIPULATION COMPARISON,NUTRIENTS,FIRE EFFECTS,FUEL REDUCTION,COMPOUNDS,HUMAN DISTURBANCE,SOIL

223. 02 584 WHEN IS THE OPTIMUM TIME TO DIRECT SEED AND/OR PLANT AFTER A SUMMER FIRE? TIMING,PLANTING,FIRE EFFECTS,CLIMATE

224. 02 646 TO WHAT DEGREE IS BITTERBRUSH REGENERATION LIMITED BY THE PLANTING OF VARIOUS COMPETITIVE GRASSES AS AN EROSION CONTROL FOLLOWING BURNS IN THE DOUGLAS FIR-MOUNTAIN BRUSH ZONES? FIRE EFFECTS,REPRODUCTION,COMPETITION,SOIL EROSION,PLANTING

225. 02 646 WHAT ARE SUCCESSION PATTERNS FOLLOWING SPRING AND FALL BURNING OF LODGE POLE PINE IN EASTERN IDAHO? PRESCRIBED FIRE,CONIFEROUS FOREST,SUCCESSION,TIMING

226. 02 646 WHAT IS BEST TIMING OF BURNS TO PRODUCE OPTIMUM REGENERATION OF BROWSE SPECIES IN DOUGLAS FIR STANDS? SHRUB UNDERSTORY,WILDLIFE,REPRODUCTION,PRESCRIBED FIRE,FIRE EFFECTS,CONIFEROUS FOREST

227. 02 647 HOW TO EVALUATE THE COSTS OF FIRE SUPPRESSION AND RESOURCE DESTRUCTION WITH EARTH MOVING EQUIPMENT AS COMPARED WITH TIMBER VALUES BEING DESTROYED IN WILDFIRE SITUATIONS? IN WHAT CASES WOULD IT BE CHEAPER TO LET A WILDFIRE BURN TO A NATURAL CONTROL LINE THAN TO SPEND WHATEVER NECESSARY TO CONTROL IT IMMEDIATELY? ECONOMIC EFFECTS,MANIPULATION COMPARISON,GENERAL FIRE MANAGEMENT

228. 02 649 CAN BRUSH FIELDS BE BURNED REPEATEDLY AT A FIVE TO TEN YEAR INTERVAL WITHOUT SERIOUS DAMAGE TO THE QUALITY OR FERTILITY OF THE SOIL? FIRE EFFECTS,FIRE FREQUENCY,SOIL,SHRUBLAND

229. 02 649 HOW IMPORTANT IS THE GROUND TEMPERATURE, CAUSED BY A FIRE, TO THE SOIL QUALITY AND FERTILITY? HEAT EFFECTS,SOIL,FIRE INTENSITY

230. 02 649 WILL REPEATED BURNS IN SHRUB COMMUNITIES CHANGE THE SPECIES COMPOSITION? FIRE FREQUENCY,FIRE EFFECTS,SHRUBLAND,SPECIES DIVERSITY

231. 02 823 HOW SERIOUS IS THE CRUSTING EFFECT OF THE FIRE ASH ON RETARDING SEEDLING ESTABLISHMENT? ASH,REPRODUCTION,SOIL STRUCTURE,ORGANISM

232. 02 823 IS IT MANDATORY TO COMPLETELY CONSUME THE HUMUS MANTEL TO DESTROY ROOTROT FUNGUS? FUEL REDUCTION,SOIL,ROOTS,FUNGUS

233. 02 823 TO WHAT EXTENT IS THE POTENTIAL SOIL EROSION HAZARD INCREASED BY A WILDFIRE? IN THE CASE OF A PRESCRIBED BURN ON A BRUSH FIELD? IN THE CASE OF A PRESCRIBED BURN ON A CLEARCUT? SOIL EROSION,PRESCRIBED FIRE,SHRUBLAND,MANIPULATION COMPARISON

234. 02 823 WHAT EFFECT DOES THE IMMEDIATE RELEASE OF NITROGEN AND OTHER PLANT NUTRIENTS HAVE ON THE SUCCESSFUL REGENERATION OF A STAND FOLLOWING A FIRE? HOW LONG ARE THE ABOVE MENTIONED ELEMENTS AVAILABLE TO NEW SEEDLINGS FOLLOWING THE FIRE? FIRE INTENSITY,NUTRIENTS,REPRODUCTION,SUCCESSION,ECOSYSTEM,TIMING

235. 02 823 WHAT EFFECT DOES THE LEACHING OF NUTRIENTS AND ASH INTO STREAMS HAVE ON THE FISHERIES? NUTRIENTS,ASH,STREAM,FISH

236. 02 823 WHAT IS THE EXTENT OF SMALL MAMMAL MORTALITY IN A FIRE WITH RELATIVELY COMPLETE CHARRING OF THE DUFF HORIZON? FUEL REDUCTION,SMALL MAMMAL,MORTALITY,POPULATION,LITTER

237. 03 020 DO "NATURAL" FOREST FIRES GENERALLY LEAD TO ACCELERATED NUTRIENT LOSSES FROM WATERSHEDS IN AREAS OF RELATIVELY LOW RAINFALL (30") AND, IF SO, FOR HOW LONG, IN WHAT FORM AND DO THESE LOSSES NOTICEABLY AFFECT LOW-ORDERED (1,2 AND 3) STREAMS? WOULD REMOVAL OF TREES BY OTHER MEANS, BUT WITHOUT LARGE SCALE MECHANICAL DISTURBANCE OF THE FOREST FLOOR, YIELD SIMILAR RESULTS?

ALSO, WILL FRUITION OF FULL-TREE UTILIZATION CONCEPTS IN THE ROCKIES, WHILE REDUCING SLASH DISPOSAL PROBLEMS, CREATE NUTRIENT BUDGETS THAT ARE NOT, QUANTITY-WISE OR TEMPORALLY, IN HARMONY WITH EVOLVED PROCESSES AND FUNCTIONING OF FORESTED ECOSYSTEMS?
NUTRIENTS,HYDROLOGY,MANIPULATION COMPARISON

238. 03 020 IS IT VALID TO ASSUME THAT CAREFULLY CONTROLLED CLEARCUTTING, OR GROUP SELECTION, MIMICS THE INTENSITY, EXTENT AND FREQUENCY OF "NATURAL" FIRE? HOW PERVASIVE ARE "EVEN-AGED" STANDS? MORE BROADLY, CAN FIRE BE MORE FULLY USED SILVICULTURALLY: IN THINNING, SPECIES CONVERSION, BROWSE DEVELOPMENT, AESTHETIC IMPROVEMENT, ETC.? MANIPULATION
COMPARISON,REPRODUCTION,COMPETITION,VEGETATION

239. 03 020 WITH THE DIVERSITY INHERENT IN LANDSCAPES LIKE THOSE OF ROCKY MOUNTAIN FORESTS, IS IT REASONABLE (POSSIBLE?) TO DEVELOP INVENTORY SYSTEMS AND REFINE MODELS WHICH PERMIT PREDICTION OF FIRE EXTENT PRIOR TO THE INITIATION OF SUPPRESSION? PARTICULARLY, COULD A PREDICTIVE SYSTEM BE DEVELOPED WITH ENOUGH RELIABILITY THAT MANAGERS AND THE PUBLIC WOULD ACCEPT THEIR USE ON SPECIFIC AREAS LIKE NATIONAL PARKS AND WILDERNESS AND PRIMITIVE AREAS? FIRE BEHAVIOR,PUBLIC REACTION

240. 03 021 IF A LAYER OF "TOPSOIL" IS APPLIED TO SURFACE-MINED AREAS DURING THE RECLAMATION PROCESSES, COULD THE BURNING OF A QUICK GROWING NURSERY CROP FOSTER THE GERMINATION OF RESIDUAL SEED OF FIRE CLIMAX NATIVE SPECIES MIXED IN THE TOPSOIL LAYER?
SEED,REPRODUCTION,SOIL

241. 03 021 WHAT ARE THE CONCURRENT AND SHORT TERM EFFECTS OF FIRE UPON MASS MOVEMENT OF DEBRIS DOWNSLOPE BY SUCH GRAVITATIONAL PROCESSES AS FALL, SLIDE, AND CREEP?
FUEL REDUCTION,SOIL EROSION

242. 03 021 WHAT EFFECT DOES FIRE HAVE ON ROCK WEATHERING?
FIRE INTENSITY,NUTRIENTS,ROCK

243. 03 023 WHAT ARE THE EFFECTS OF FIRE AND THE CONSEQUENCES OF FIRE, I.E., THE REMOVAL OF VEGETATION FROM AN AREA, ON THE POPULATIONS AND THE ACTIVITY OF THE TYPES OF BACTERIA KNOWN AS THE NITRIFIERS? THERE HAS BEEN SOME INTEREST IN THESE BACTERIA IN RECENT YEARS IN RELATION TO FOREST SOILS. IS IT POSSIBLE THAT THEIR ACTIVITY MAY HAVE SOME BEARING ON THE FERTILITY OF SOILS IN CLEARED AREAS? MICROORGANISM,NUTRIENTS,POPULATION

244. 03 023 WHAT IS THE EFFECT OF FIRE ON THE POPULATIONS OF FUNGI WHICH ACT AS MYCORRHIZAE AND, IF THERE IS ANY EFFECT, HOW DOES THIS RELATE TO THE REGENERATION OF YOUNG TREES?
POPULATION,FUNGUS,ROOTS,REPRODUCTION,VEGETATION

245. 03 025 CAN FIRE BE USED TO MAINTAIN A STAND OF SERVICEBERRY, CHOKECHERRY, MTN MAPLE, AND CEANOTHUS IN VIGOUROUS CONDITIONS? PRODUCTIVITY,SHRUBLAND

246. 03 025 HOW CAN FIRE BE USED AS A MANAGEMENT TOOL FOR IMPROVING WINTER BIG GAME RANGES (IN PARTICULAR MIXED SHRUB-GRASS-FORB COMMUNITIES)? GAME ANIMAL,PRODUCTIVITY,HERBAGE UNDERSTORY,SHRUBLAND

247. 03 025 WHAT DOES FIRE DO TO THE NUTRIENT CHARACTERISTICS OF KEY SHRUBS AND RESULTANT PALATABILITY AND USE PATTERNS BY HERBIVORES? NUTRIENTS,SHRUBLAND,HERBIVORY

248. 03 055 COULD NOT GREAT EDUCATIONAL BENEFITS (PUBLIC) BE DERIVED FROM PROGRAMS TO INTERPRET ONGOING WILDFIRES? LIGHTNING STORMS & WILDFIRE, IF VIEWED IN THE PROPER PERSPECTIVE, CAN BE SEEN AS IMPRESSIVE & BEAUTIFUL MANIFESTATIONS OF THE NATURAL WORLD. NEITHER ARE INTRINSICALLY BAD OR EVIL. WHILE NOT ALL LIGHTNING FIRES CAN BE PERMITTED TO BURN, EDUCATIONAL OPPORTUNITIES EXIST WITH ALL BURNS. YET VERY LITTLE IS DONE BY RESPONSIBLE AGENCIES TO UTILIZE THE OPPORTUNITIES. SOCIAL EFFECTS,PUBLIC REACTION

249. 03 055 HOW ARE THE AESTHETIC QUALITIES OF WILD AREAS AFFECTED BY SUPPRESSION ACTIVITIES WHICH LEAVE LONG TERM EVIDENCE OF SUCH ACTIVITIES (BULLDOZER USE, GARBAGE DUMPS FROM FIRE CAMPS, ETC.)? AESTHETICS,GENERAL FIRE MANAGEMENT

250. 03 055 MANY SCIENTISTS NOW BELIEVE THAT FIRE IN THE FOREST ECOSYSTEM IS AN ECOLOGIC FACTOR OF UNSURPASSED SIGNIFICANCE AND IS TO A LARGE DEGREE RESPONSIBLE FOR "MOLDING" MUCH OF THE PRESENT BIOTA, YET GOV'T AGENCY PROGRAMS CONTINUE TO EMPHASIZE FIRE'S DESTRUCTION OF LAND. A REORIENTATION OF AGENCY EDUCATIONAL AND OPERATIONAL PROGRAMS IS DESPERATELY NEEDED. SOCIAL EFFECTS,PUBLIC REACTION

251. 03 055 WHAT ARE THE ECOLOGICAL CONSEQUENCES OF SUPPRESSION ACTIVITIES, PARTICULARLY BULLDOZER USE? HAS NOT THE USE OF BULLDOZERS PRODUCED LONG TERM ECOLOGICAL DETERIORATION IN AFFECTED ECOSYSTEMS-AT LEAST IN AREAS OF THIN SOIL & STEEP TERRAIN? GENERAL FIRE MANAGEMENT,SOIL

252. 03 055 WHAT ARE THE ECOLOGICAL RELATIONSHIPS BETWEEN FIRE & HUCKLEBERRIES IN THE NORTHERN ROCKIES? VACCINIUM SPP. ARE IMPORTANT IN TERMS OF AESTHETIC VALUES & BERRY PRODUCTION. IS FIRE EXCLUSION DIMINISHING THEIR ABUNDANCE? TO WHAT EXTENT ARE THEY DEPENDENT UPON FIRE FOR PERPETUATION? SHRUBLAND,PRODUCTIVITY,FIRE EXCLUSION,AESTHETICS

253. 03 055 WHAT IS THE PUBLIC ATTITUDE TOWARDS THE NATURAL ROLE OF FIRE IN ECOSYSTEMS? CAN THE SMOKEY BEAR SYNDROME BE TEMPERED BY EDUCATIONAL PROGRAMS, BOTH WITH LAND MANAGERS & THE PUBLIC? PUBLIC REACTION

254. 03 055 WHAT SONG BIRDS IN THE NORTHERN ROCKIES REQUIRE BURNED AREAS DURING SOME PORTION OF THE YEAR? WHAT ATTRIBUTES OF BURNED AREAS ARE ESSENTIAL FOR SUCH SPECIES? BIRD,EXPERIMENT ORIENTED QUESTION

255. 03 055 WHAT UNIQUE ECOLOGICAL ROLES ARE FILLED BY FIRE KILLED SNAGS? WHAT TREE SPECIES PRODUCE SNAGS MOST-USED BY BIRDS? SNAG,BIRD

256. 03 055 WITH THE ECOLOGICAL IMPORTANCE OF FIRE SEEMINGLY RECOGNIZED BY FEDERAL AGENCIES, WHY DOES THE SMOKEY BEAR PROPAGANDA MACHINE DRONE ON WITH THE IMPLICATION THAT FIRE IS INHERENTLY BAD AND THAT "LAND" IS DESTROYED BY FIRE? VALUE JUDGEMENT,PUBLIC REACTION

257. 03 109 CAN CONTROLLED BURNING BE USED TO REJUVENATE DECADENT STANDS OF SHRUBS ON BIG GAME WINTER RANGE? HOW DO SHRUBS RESPOND TO BURNING AT VARIOUS AMOUNTS OF FINE FUEL IN THE UNDERSTORY, AND ON VARIOUS SOIL TYPES? WHAT ARE THE RESPONSES AS EXPRESSED IN NUMBER AND LENGTH OF NEW SPROUTS (INITIAL RESPONSES AND MORTALITY/SURVIVAL LATER), HERBAGE PRODUCTION, AND CHEMICAL CONTENT OF NEW GROWTH? PRESCRIBED FIRE,SHRUBLAND,REPRODUCTION,PRODUCTIVITY,STEM,MORTALITY, HERBAGE UNDERSTORY,NUTRIENTS,GAME ANIMAL

258. 03 109 HOW DOES FIRE SUPPRESSION AFFECT THE AMOUNT OF WINTER RANGE AVAILABLE TO MULE DEER, WHITETAIL DEER, AND ELK HERDS? CAN A "LET BURN" POLICY BE DEVELOPED TO MAINTAIN PRESENT WINTER RANGES AND DEVELOP NEW ONES? FIRE EXCLUSION,GAME ANIMAL,PRODUCTIVITY

259. 03 109 HOW DOES THE BURNING OF SLASH, FOLLOWING LOGGING PRACTICES, RELATE TO SUBSEQUENT SOIL EROSION AND STREAM SILTATION? HOW DOES THE BURNING OF PILES OF SLASH AFFECT THE STRUCTURE, ORGANIC MATTER, WATER HOLDING CAPACITY, CHEMICAL CONTENT, AND ERODIBILITY OF THE SOIL BENEATH THE SLASH PILES? FUEL REDUCTION,FUEL REDUCTION,SOIL EROSION,STREAM

260. 03 109 WHAT IS THE DEVELOPMENTAL AND SUCCESSIONAL PATTERN OF UNDERSTORY PLANT COMMUNITIES FOLLOWING FIRES OF VARIOUS CHARACTERISTICS? SUCCESSION,HERBAGE UNDERSTORY,SHRUB UNDERSTORY

261. 03 119 HOW CAN ENVIRONMENTAL FACTORS (HABITAT COMPLEXITY, SPECIES COMPOSITION, ETC.) BE MANIPULATED TO CONTROL THE SUCCESSIONAL SMALL MAMMAL FAUNA? SPECIES DIVERSITY,SUCCESSION,SMALL MAMMAL,FUEL REDUCTION,PRESCRIBED FIRE

262. 03 119 HOW IS IT POSSIBLE THAT SOME FOREST TYPES OF LIMITED FIRE EXPERIENCE (FUEL REDUCTION) SUCH AS ENGLEMAN SPRUCE-SUBALPINE FIR HAVE REACHED CONSIDERABLE AGE AND SIZE BUT ARE AT TIMES WIPED OUT AND REPLACED BY LODGEPOLE PINE? THIS MIGHT BE STATED DIFFERENTLY, I'M NOT SURE HOW. FIRE FREQUENCY,SUCCESSION

263. 03 119 IN PARTICULAR, IT WOULD BE DESIRABLE TO EXAMINE THE POSSIBLE CONDITIONS WHICH HAVE LED UP TO SOME OF THE LARGE FIRES IN THE NORTHERN ROCKIES SUCH AS THE 1910 FIRE, THE PETE KING FIRE, THE SUN DANCE FIRE AND OTHERS. WERE THESE LARGE BECAUSE OF FIRE PROTECTION AND CONSEQUENT FUEL BUILD UP? FIRE EXCLUSION,FIRE HISTORY,FUEL/BIOMASS ACCUMULATION

264. 03 119 UNDER WHAT CONDITIONS (TYPES OF BURN AND CUTTING COMBINATIONS) DOES THE WOODMOUSE (PEROMYSCUS LEUCOPUS) EXHIBIT INCREASED POPULATION DENSITIES AND SUBSEQUENTLY CAUSE SEED AND SEEDLING LOSS? MANIPULATION COMPARISON,SMALL MAMMAL,POPULATION,DENSITY,SEED,REPRODUCTION

265. 03 123 DOES A WILDFIRE BECOME A MORE DESTRUCTIVE PROCESS IN FORESTS THAT ARE SIMULTANEOUSLY INFLUENCED BY INSECTS AND/OR FUNGI PATHOGENS? INSECT,FUNGUS

266. 03 123 HOW ARE NON-FIRE-DEPENDENT TREE SPECIES INFLUENCED BY NON-DESTRUCTIVE GROUND FIRES? GROUND FIRE

267. 03 123 WHAT IS THE ACTUAL RATE OF ORGANIC FUEL ACCUMULATION IN CONIFEROUS FOREST BIOMES (MONTANA AND IDAHO)? ARE THESE RATES VARIABLE BETWEEN 0-200 YEARS FOLLOWING FIRE DISTURBANCE? DO FUEL ACCUMULATIONS AFFECT THE RATE OF PRODUCTIVITY OF TREES, SHRUBS AND HERBS? IF SO, IS THERE A CRITICAL POINT THAT CAN BE IDENTIFIED? FUEL/BIOMASS ACCUMULATION,PRODUCTIVITY,SHRUB UNDERSTORY,HERBAGE UNDERSTORY

268. 03 123 WHAT IS THE BASIC LANDSCAPE MOSAIC (VEGETATIONAL LIFE-FORM COMPLEX) THAT WILL EXHIBIT FIRE CONTROL OR CONTAINMENT PROPERTIES ON A GIVEN TOPOGRAPHIC SITE? HOW CAN A MOSAIC EFFECT BE MEASURED? MOSAIC,FIRE BEHAVIOR,FLAMMABILITY

269. 03 123 WHAT SPECIES OF ANIMALS ARE SPECIFICALLY AFFECTED BY THE GRADUAL REDUCTION OF PLANT COMMUNITY LIFE-FORM DIVERSITY? ANIMALS,SPECIES DIVERSITY

270. 03 137 COULD LOGGING SIMULATE THE EFFECTS OF NATURAL FIRES? IF SO, HOW CAN THIS BEST BE ACCOMPLISHED IN VARIOUS REPRESENTATIVE HABITAT TYPES, KEEPING FINANCIAL CONSTRAINTS IN MIND? MANIPULATION COMPARISON

271. 03 137 WHAT ARE THE PATTERNS AND EFFECTS OF LITTER ACCUMMULATION AND FUEL BUILDUP WITH FIRE SUPPRESSION IN REPRESENTATIVE CONIFEROUS FOREST COMMUNITIES (HABITAT TYPES) IN THE NORTHERN ROCKIES? HOW WILL FIRE EXCLUSION AFFECT VIGOR, DISEASE RESISTANCE, AND REGENERATION OF A VARIETY OF SIVICULTURALLY MANAGED STANDS? (USING OUR LOW-INTENSITY SILVICULTURE AS THE REFERENCE POINT) FIRE EXCLUSION,LITTER,FUEL/BIOMASS ACCUMULATION,PRODUCTIVITY,DISEASE,REPRODUCTION

272. 03 138 HOW DOES USE OF POST-HARVEST PRESCRIBED FIRE AFFECT SOIL CHARACTER, HYDROLOGY, NUTRIENT BALANCE & OFF-SITE TRANSPORT OF NUTRIENTS? HOW DOES THIS INTERRELATE WITH VOLUME OF RESIDUE MATERIAL LEFT ON GROUND TO BURN? UNDER INTENSIVE RESIDUE UTILIZATION PRACTICES, THERE WILL BE LITTLE LEFT ON THE AREA TO BURN. PRESCRIBED FIRE,SOIL,HYDROLOGY,NUTRIENTS,FUEL REDUCTION,FUEL REDUCTION

273. 03 138 HOW MUCH IMPACT DOES FIRE POLICY (EXCLUSION, CONTROL, PRESCRIBED FIRE, SLASH REDUCTION PRACTICES, ETC.) HAVE ON THE DEVELOPMENT AND ACCUMULATION OF WOOD RESIDUES IN ROCKY MOUNTAIN TIMBER TYPES? (RESIDUES TO INCLUDE ALL DEAD MATERIAL, AS WELL AS LOGGING OR THINNING SLASH). GENERAL FIRE MANAGEMENT,FUEL/BIOMASS ACCUMULATION

274. 03 138 MOST HARVESTING PRACTICES RESULT IN RE-ARRANGING AND RE-DISTPIBUTING FUELS-- FOR EXAMPLE, SKYLINE ROADS MAY HAVE HEAVY ACCUMULATIONS OF LIGHT FUELS UNDER THE SKYLINE, WITH VERY LITTLE LEFT OUT BETWEEN SKYLINE SETTINGS. IF POST-HARVEST SITE TREATMENT INCLUDES BURNING, WHAT EFFECTS WILL THE FUEL DISTRIBUTION PATTERN HAVE ON SOILS, HYDROLOGY, NUTRIENT AVAILABILITY, MICROBIAL ACTIVITY, & OTHER BIOLOGICAL ATTRIBUTES? MANIPULATION COMPARISON,FUEL/BIOMASS ACCUMULATION,MOSAIC,ZONATION,SOIL,HYDROLOGY,NUTRIENTS

275. 03 138 WILL EXCLUSION OF POST-HARVEST (LOGGING) USE OF FIRE (WHICH MAY BE NECESSITATED IF RESIDUE UTILIZATION IS INTENSIVE) HAVE SERIOUS EFFECTS UPON STAND REGENERATION? IF SO, IS THERE A NEED TO PRESCRIBE RESIDUE UTILIZATION STANDARDS IN SUCH A MANNER THAT SOME FUELS ARE LEFT ON-SITE TO CARRY A FIRE? FIRE EXCLUSION,FUEL REDUCTION,REPRODUCTION,COMMUNITY

276. 03 140 WHAT IS THE NATURE AND RATE OF ORGANIC MATTER ACCUMULATION AND DECOMPOSITION ON DIFFERENT NORTHERN ROCKY MOUNTAIN FORESTED ECOSYSTEMS? HOW DO THEY CHANGE WITH STAND AGE? HOW ARE THEY AFFECTED BY PERIODIC, CATASTROPHIC AND ENDEMIC INFLUENCES LIKE DISEASE, INSECT AND WINDTHROW? (A LONG-TERM MODEL WILL PROBABLY BE NEEDED FOR AT LEAST 10 TYPES. ALSO, AVERAGE FIRE FREQUENCY WILL NEED TO BE TIED TO EACH TYPE.) FUEL/BIOMASS ACCUMULATION,AGE,DISEASE,INSECT,WINDTHROW,FIRE FREQUENCY

277. 03 142 ARE BRUSH CYCLES NECESSARY TO SUCCESSFUL REGENERATION OF CONIFER STANDS ON SITES WITH SEVERE OR DRY EXPOSURES? SHRUBLAND,REPRODUCTION

278. 03 142 ARE PERIODIC FIRES NEEDED TO MAINTAIN PATHOGEN POPULATIONS IN PROPER BALANCE WITH OTHER COMPONENTS OF THE ECOSYSTEM, OR MORE SPECIFICALLY, ARE PERIODIC SANITIZING EFFECTS OF FIRE NEEDED TO MAINTAIN HEALTHY GROWTH OF TREES? FIRE FREQUENCY,DISEASE

279. 03 142 CONSIDERING MANY ROTATIONS, HOW MUCH TREE MATERIAL SUCH AS NEEDLES AND BRANCHWOOD SHOULD BE LEFT IN THE FOREST AFTER HARVESTING IN ORDER TO FURNISH NUTRIENTS TO THE SUCCEEDING FOREST CROP WITHOUT LONG-TERM LOSS OF PRODUCTIVITY? WHEN MINIMUM AMOUNTS OF RESIDUE ARE LEFT, IS FIRE TREATMENT DESIRABLE OR UNDESIRABLE? FUEL REDUCTION,NUTRIENTS,PRODUCTIVITY,MANIPULATION COMPARISON

280. 03 142 HOW LONG CAN ROCKY MOUNTAIN BRUSHFIELDS BE KEPT IN BRUSH USING REPEATED FIRE WITHOUT REDUCTION IN PLANT AND ANIMAL PRODUCTIVITIES? SHRUBLAND,FIRE FREQUENCY,SUCCESSION,PRODUCTIVITY

281. 03 142 HOW SIGNIFICANT IS PERICDIC FIRE IN THE A. CARBON CYCLE, AND B. NUTRIENT CYCLE IN A FOREST STAND? FIRE FREQUENCY,NUTRIENTS

282. 03 142 IF FIRE IS ABSENT FROM ROCKY MOUNTAIN FORESTS FOR MANY TIMES THE NORMAL FIRE FREQUENCY, WILL A. DEAD FUEL ACCUMULATION ON THE FOREST FLCOR BALANCE DECOMPOSITION, AND B. WILL PRODUCTIVITY BE REDUCED, EVEN IF NEW STANDS ARE PLANTED? FIRE EXCLUSION,FUEL/BICMASS ACCUMULATICN,DECOMPCSITION,PRODUCTIVITY

283. 03 142 WHAT ARE THE RELATIONSHIPS BETWEEN FIRE INTENSITY AND BURN DURATICN AND: A. AVAILABILITY OF ESSENTIAL PLANT NUTRIENTS B. LOSS OF ESSENTIAL PLANT NUTRIENTS FROM UPPER SOIL LAYERS C. POPULATICN DYNAMICS OF SOIL FUNGI AND BACTERIA D. POPULATION DYNAMICS OF SOIL FAUNA. FIRE
INTENSITY,TIMING,NUTRIENTS,SOIL,FUNGUS,MICROORGANISM

284. 03 142 WHAT MAN-MADE ACCUMULATIONS, SUCH AS SLASH FRCM HARVESTING, WILL, IF PRESCRIBED BURNED, RESULT IN SOIL DAMAGE AND IMPAIRMENT OF SITE QUALITY? FUEL REDUCTION,SOIL,PRESCRIBED FIRE

285. 03 145 IS THERE AN OPPORTUNITY TO USE FIRE MANAGEMENT IN THE POSSIBLE CONTROL OR MANIPULATION OF INSECT POPULATIONS WHICH MAY SPEND ALL OR PART OF THEIR LIFE CYCLE IN THE LITTER OR DUFF OR EVEN ON LOW GROWING VEGETATION? INSECT,LITTER

286. 03 145 MANY SPECIES CF FOREST INSECTS DO THEIR BEST WITHIN DYING OR WEAKENED MATERIAL. WHAT EFFECT DO TREES DAMAGED OR WEAKENED BY FIRE HAVE IN THE DEVELOPMENT OF OUTBREAKS OF THOSE SPECIES OF FOREST INSECTS WHICH DEPEND ON WEAKENED OR DYING MATERIAL TO DEVELOP?
MORTALITY,INSECT,POPULATION

287. 03 145 WHAT INFLUENCE MIGHT EXTENSIVE AREAS OF FORESTS KILLED OR SEVERELY DEFOLIATED BY FOREST INSECTS HAVE ON DECISIONS CONCERNING FIRE SUPPRESSION OR FIRE EXCLUSION. (A GOOD SHARE OF THE SLEEPING CHILD FIRE IN THE BITTERROOT NOT TOO LONG AGO ROARED THROUGH STANDS OF LODGEPOLE PINE CONTAINING A GOOD MANY CUBIC FEET OF DOWNED MATERIAL RESULTING FROM A WIDESPREAD OUTBREAK OF THE MOUNTAIN PINE BEETLE IN THE '30'S AND '40'S.)
INSECT,FUEL/BIOMASS ACCUMULATION,FIRE EXCLUSION,FIRE BEHAVIOR,MORTALITY,GENERAL FIRE MANAGEMENT

288. 03 145 WHAT IS THE EFFECT OF VARYING INTENSITIES OF GROUND FIRES ON INSECTS AND OTHER ARTHROPODS INHABITING THE LITTER, DUFF AND SOIL IN DIFFERENT SOIL TYPES, FOREST TYPES, SLOPES ETC.? FIRE INTENSITY,GROUND FIRE,ARTHROPODS,LITTER,SOIL

289. 03 146 DO FIRE-ALLELCPATHIC RELATICNSHIPS EXIST IN NORTHERN ROCKY MOUNTAIN PONDEROSA PINE STANDS?
ALLELOPATHY,EXPERIMENT ORIENTED QUESTION

290. 03 146 IS FIRE PERIODICITY IN FACT GOVERNED, TO A LARGE EXTENT, BY THE OCCURRENCE AND TIMING OF INSECT ATTACKS, DISEASE OUTBREAKS, WINDSTORMS, AND PREVIOUS FIRES? FIRE FREQUENCY,INSECT,DISEASE,WINDTHROW

291. 03 146 WHAT IS THE QUANTITATIVE RELATIONSHIP BETWEEN FIRE (OR FIRE EXCLUSION) AND THE ACCUMULATION OF DEAD ORGANIC MATTER ON THE FOREST FLOOR OF NORTHERN ROCKY MOUNTAIN CONIFEROUS FORESTS? HOW DOES THIS RELATIONSHIP VARY (BY HABITAT TYPE, ETC.)? FIRE FREQUENCY,FUEL/BIOMASS ACCUMULATION,FUEL REDUCTION

292. 03 147 CAN WE DEVELOP A LOGICAL GENERIC CLASSIFICATION, OR NOMENCLATURE, OF FIRE EFFECTS, BASED ON "MANAGEMENT" OR ECOLOGICAL OBJECTIVES? FOR EXAMPLE, "LIMITED FREE BURNING" SHOULD FIT INTO SOME CLASSIFICATION BY ECOLOGICAL OBJECTIVES, SUCH AS WILDERNESS MANAGEMENT, WHOSE DESIRED CHARACTERISTIC COULD BE QUITE DIFFERENT FROM "LIMITED FREE BURNING" FOR HAZARD REDUCTION IN TIMBER PRODUCTION. IN LATTER CASES, LIMITING TREE MORTALITY MAY BE THE MOST IMPORTANT CONSIDERATION, WHILE CONTAINMENT WITHIN THE MANAGEMENT UNIT MAY BE THE MAIN CONSIDERATION IN WILDERNESS MANAGEMENT. EXPERIMENT ORIENTED QUESTION

293. 03 147 HOW CAN WE ISOLATE LONG-TERM FIRE EFFECTS ON AN ECOSYSTEM FROM SHORT-TERM FACTORS AFFECTING SYSTEMS, SUCH AS AIR POLLUTION, BOUNDARY ENCROACHMENT TO WILDERNESS, AND SO FORTH? GENERAL FIRE MANAGEMENT,TIMING

294. 03 147 WHAT ARE BOUNDARY CONDITIONS (MAXIMUM AND MINIMUM VALUES FOR VARIOUS FIRE ATTRIBUTES) WHEREIN FIRE CAN CAUSE IRREVERSIBLE ECOLOGICAL CHANGES BY ALTERING ECOLOGIC, MICRO-METEOROLOGIC, AND OTHER FACTORS? GENERAL FIRE MANAGEMENT,FIRE BEHAVIOR

295. 03 148 DOES MAINTAINING AN AREA IN LOW LIFE-FORM VEGETATION AT LOW ELEVATION (2500-4000 FEET, NORTHERN IDAHO) AFFECT THE TIMING OF SPRING RUNOFF SIGNIFICANTLY? HYDROLOGY,TIMING,SUCCESSION,SHRUBLAND

296. 03 148 WHAT ARE PREDICTED (SIMULATED) LONG TERM EFFECTS ON SOIL FERTILITY OF MAINTAINING AN AREA, THAT NORMALLY SUCCEEDS TO TREE VEGETATION, IN A LOWER LIFE-FORM, NAMELY SHRUBS AND HERBACEOUS VEGETATION? FIRE FREQUENCY,SUCCESSION,SHRUB UNDERSTORY,NUTRIENTS

297. 03 148 WHAT ARE THE SPECIFIC ON-SITE SHORT TERM EFFECTS OF BURNING BRUSHFIELDS ON SOIL MOVEMENTS IN QUANTITATIVE TERMS? SHRUBLAND,SOIL EROSION

298. 03 149 THE NATURAL HISTORY OF THE NORTHERN ROCKIES SUGGESTS THAT SOME INSECT AND DISEASE PESTS HAVE BEEN STRONGLY INFLUENCED BY WILDFIRE. HAS THE CONTROL OF ANY INSECT OR DISEASE PESTS BY WILDFIRE PRECLUDED THE DEVELOPMENT OF STRONG GENETIC RESISTANCE MECHANISMS IN HOST SPECIES? INSECT,DISEASE,GENETIC RESPONSE

299. 03 149 OBSERVATION OF THE PATTERN OF LIVE TREES SURVIVING MAJOR WILDFIRES SUGGESTS A POPULATION STRUCTURE IDEAL FOR GENETIC DRIFT. TO WHAT EXTENT HAS GENETIC DRIFT PLAYED A MORE SIGNIFICANT EVOLUTIONARY ROLE IN THE NORTHERN ROCKY MOUNTAINS THAN IN OTHER NORTH TEMPERATE REGIONS? ARE NONADAPTIVE TRAITS MORE PREVALENT IN NORTHERN ROCKY MOUNTAIN CONIFERS THAN IN CONIFERS OF OTHER NORTH TEMPERATE REGIONS? GENETIC RESPONSE,POPULATION

300. 03 149 THERE IS EVIDENCE IN JACK PINE AND LODGEPOLE PINE, AND CERTAIN OTHER SEROTINOUS CONE PINES, THAT CONE SEROTINY IS CONTROLLED BY A SINGLE ADDITIVE-EFFECT GENE PAIR. HAS THIS BEEN CONFIRMED YET IN LODGEPOLE PINE? IF IT IS TRUE, WHAT ARE THE IMPLICATIONS FOR THE LODGEPOLE PINE MANAGER? GENETIC RESPONSE

301. 03 151 HOW LARGE MUST A FOREST FIRE BE TO ACTUALLY KILL ANY BIG GAME ANIMALS, AND WHAT PERCENTAGE OF SUCH POPULATIONS ARE KILLED (IF ANY) BY LARGE FIRES? AREA SIZE,GAME ANIMAL,MORTALITY

302. 03 151 HOW MUCH VARIATION IN POST-FIRE SUCCESSIONAL PATTERNS CAN BE ASSOCIATED WITH (A) SUPPRESSION ACTIVITY THAT LENGTHENS THE FIRE CYCLE AND PRESUMABLY INCREASES EVENTUAL BURNING SEVERITY, AND (B) PRESCRIBED BURNING UNDER LESS THAN IDEAL BURNING CONDITIONS, I.E., HIGH MOISTURE LEVELS AND WET SOILS? SUCCESSION,FIRE EXCLUSION,FUEL/BIOMASS ACCUMULATION,PRESCRIBED FIRE,CLIMATE,TIMING

303. 03 151 HOW MUCH VARIATION IN RESPROUTING RESPONSE FOLLOWING FIRE CAN BE EXPECTED AMONG THE COMMON SHRUB SPECIES OF THE BOREAL FOREST? WHAT MIGHT BE COMPARATIVE RESPROUTING RESPONSES OF PARTIALLY BURNED SHRUBS, AS COMPARED TO THOSE ON WHICH THE CROWN IS COMPLETELY KILLED? SHRUBLAND,REPRODUCTION,MORTALITY

304. 03 151 WHAT ARE THE IMMEDIATE EFFECTS OF FOREST FIRE ASH TRANSPORT IN STREAMS, HOW MUCH IS AQUATIC LIFE ACTUALLY AFFECTED, AND HOW LONG DOES THE EFFECT LAST? ASH,STREAM,INSECT,FISH,TIMING

305. 03 151 WHAT ARE THE RELATIONSHIPS AMONG BURNING SEVERITY, SOIL BACTERIAL POPULATIONS AND NITROGEN CYCLING IN FOREST SOILS? FIRE INTENSITY,MICROORGANISM,SOIL,NUTRIENTS

306. 03 154 ARE THERE POSITIVE CORRELATIONS BETWEEN THOSE NUTRIENTS IN UNIQUELY HIGH DEMAND BY FIRE ADAPTED PLANT SPECIES AND THOSE NUTRIENTS FOUND IN GREATEST QUANTITIES IN THE ASH FROM FOREST FIRES? NUTRIENTS,ASH,VEGETATION

307. 03 154 HOW DO SOIL ORGANISMS RESPOND TO FIRES OF VARIOUS INTENSITIES AND CONSEQUENT SOIL CHEMISTRY ALTERATIONS? SOIL,FIRE INTENSITY,NUTRIENTS

308. 03 154 IN THE ABSENCE OF FIRE, WHAT IS THE RATE OF TIE-UP OF BIOLOGICALLY IMPORTANT NUTRIENTS IN THE FORM OF DEAD, UNDECOMPOSED PLANT MATERIAL? WHAT IS THE RATE OF PRODUCTION OF DEAD MATERIAL OF PLANT ORIGIN AND THE RATE OF DECOMPOSITION (SANS FIRE), ESPECIALLY IN THOSE PLANT COMMUNITIES MOST IMPORTANT TO MAN IN TERMS OF PRODUCTIVITY? FIRE EXCLUSION,NUTRIENTS,FUEL/BIOMASS ACCUMULATION,DECOMPOSITION,PRODUCTIVITY

309. 03 154 WHAT ARE THE MECHANISMS AND DOMINANT VARIBLES WHICH DETERMINE THE OCCURRENCE AND LEVEL OF INSECT ATTACKS IN RESPONSE TO BURNING? WHAT TREES, AS AFFECTED BY FIRE, ARE MOST SUSCEPTIBLE TO ATTACK? IN PARTICULAR, HOW DOES SEASONAL TIMING OF THE FIRE INFLUENCE THE RATE AND LEVEL OF INFESTATION? EXPERIMENT ORIENTED QUESTION,INSECT,HERBIVORY,TIMING

310. 03 154 WHAT IS THE ADJUSTMENT IN ECOLOGICAL SUCCESSIONAL STATE, IN GIVEN PLANT COMMUNITIES, IN RESPONSE TO FIRES OF VARYING INTENSITY AND CHARACTER? IN PLANT COMMUNITIES, WHICH HAVE FOR EONS OF TIME BEEN MAINTAINED BY FIRE, WHAT IS THE PROBABLE BIOLOGICAL TERMINUS IF FIRE COULD BE INDEFINITELY OMITTED? SUCCESSION,FIRE INTENSITY,FIRE EXCLUSION

311. 03 154 WHAT IS THE RESPONSE OF VEGETATION (IE. SHIFTS IN SPECIES COMPOSITION, CHANGES IN PRODUCTION RATES WITHIN SPECIES, INJURY BY HEATING) TO BURNING AT VARIOUS FIRE INTENSITIES AND AT VARIOUS TIMES OF THE YEAR? HOW DO DIFFERENT PLANT COMMUNITIES RESPOND? SPECIES DIVERSITY,PRODUCTIVITY,HEAT EFFECTS,FIRE INTENSITY,TIMING

312. 03 154 WHAT KINDS AND AMOUNTS OF COMBUSTION PRODUCTS (GASES AND PARTICULATES) ARE PRODUCED AND CARRIED ALOFT IN A FIRE SMOKE COLUMN? HOW DO THESE VARY WITH THE KIND OF FUEL AVAILABLE AND ITS PHYSICAL STATE? NUTRIENTS,AIR POLLUTION,SPECIES DIVERSITY

313. 03 155 FOR A GIVEN ENVIRONMENT, HOW HAS THE NATURAL ROLE OF FIRE VARIED DUE TO OTHER FACTORS? FOR INSTANCE, IS THE FREQUENCY OF LIGHTNING OCCURRENCE BY GEOGRAPHIC AREAS ENOUGH DIFFERENT TO CONSTITUTE A MAJOR INDEPENDENT VARIBLE? ALSO, THE JUXTAPOSITION OF DIFFERENT ENVIRONMENTS WITH RESPECT TO EACH OTHER ADDS ANOTHER FACTOR OF VARIABILITY IN PREDICTING FIRE SUSCEPTIBILITY. MOSAIC,ZONATION,FLAMMABILITY,LIGHTNING-CAUSED FIRE,AREA SIZE

314. 03 155 HOW DOES FIRE INTENSITY VARY WITH: STAND AGE, COMPOSITION, DENSITY, TOPOGRAPHY, ASPECT, ENVIRONMENT, AND WEATHER? FIRE BEHAVIOR

315. 03 155 IS FUEL ACCUMULATION REALLY A CONTINUOUSLY INCREASING FUNCTION WITH TIME? HAS THIS HYPOTHESIS BEEN ADEQUATELY TESTED? I KNOW IT ACCUMULATES VERY RAPIDLY AT THE SUCCESSIONAL POINT WHERE THE SERAL STAND OF TIMBER BREAKS UP AND IS REPLACED BY TOLERANT SPECIES. HOWEVER, AFTER THIS POINT IN TIME DECOMPOSITION MAY ACCELERATE. FUEL/BIOMASS ACCUMULATION

316. 03 155 WHAT IS THE FIRE HISTORY OF OUR NATURAL FOREST STANDS IN RESPECT TO (A) DIFFERENT ENVIRONMENTS AND (B) DIFFERENT GEOGRAPHIC AREAS? WHAT ARE THE EXPECTED FREQUENCIES AND ACCOMPANYING INTENSITIES OF FIRES IN VARIOUS HABITAT TYPES? WHAT IS THE ROLE OF FIRES IN PP/BUNCHGRASS SAVANNAHS IN CONTRAST TO THE ROLE OF FIRE IN AF/MENZIESIA OR WRC/PACHISTIMA HABITATS? FIRE FREQUENCY,FIRE INTENSITY

317. 03 155 WHAT IS THE PROBABILITY AND PREDICTED INTENSITY OF A FIRE AT A GIVEN POINT IN TIME FOR A SPECIFIC ENVIRONMENT? I THINK WE NEED TO BEGIN DEVELOPING MODELS (HYPOTHESIS TO BE TESTED) THAT ARE ENVIRONMENT SPECIFIC AND TIME DEPENDENT TO EXPRESS A MAJOR PORTION OF THE VARIABILITY OF THE ROLE OF FIRE IN CONIFEROUS FORESTS. FIRE INTENSITY

318. 03 156 WHAT ARE THE SHORT AND LONG-TERM EFFECTS OF FIRES OF DIFFERENT INTENSITIES (INCLUDING NO FIRE) ON THE MICROFLORA AND MICROFAUNA OF THE FOREST FLOOR (INCLUDING DUFF AND FERMENTATION LAYERS AS WELL AS MINERAL SOIL) ON DIFFERENT ECOLOGICAL HABITAT TYPES? THIS SHOULD INCLUDE THOSE ORGANISMS GENERALLY REGARDED BENEFICIAL, AS WELL AS THOSE PATHOGENS FELT TO BE PROBLEMS FOR FOREST MANAGEMENT. FIRE FREQUENCY,FIRE INTENSITY,MICROORGANISM,LITTER,SOIL

319. 03 158 FROM A PLANT ECOLOGY AND FOREST SUCCESSION STANDPOINT, AN IMPORTANT ASPECT OF UNDERSTANDING THE ECOLOGICAL EFFECTS OF FIRE LIES IN THE AREA OF ADAPTATIONS TO SURVIVE FIRE. KNOWLEDGE OF THE MECHANISMS AND/OR STRATAGEM EMPLOYED BY AT LEAST THE "ECOLOGICALLY IMPORTANT" SPECIES OF POST-FIRE FOREST COMMUNITIES WOULD GIVE AN INSIGHT TO THEIR INITIATION AND PROVIDE THE KEY FOR PREDICTING THEIR COMPOSITION. (1.) WHAT PHYSICAL FORM (MORPHOLOGIC) DOES THE FIRE SURVIVAL ADAPTATION TAKE? (2.) WHERE IS THE MORPHOLOGICAL FEATURE LOCATED WITH RESPECT TO THE GROUND AND WHAT IS THE EFFECT OF FIRE INTENSITY? (3.) FOR DISPERSAL ADAPTATIONS WHAT ARE THE TIME WINDOW LIMITATIONS? GENETIC RESPONSE,FIRE FREQUENCY

320. 03 234 WHAT IS THE PROGRESSION OF USE BY MAMMALS AND BIRDS AFTER A MAJOR BURN HAS OCCURRED? ANIMALS,BIRD,SUCCESSION

321. 03 234 WHAT IS THE RECOVERY RATE OF RIPARIAN VEGETATION ALONG TROUT STREAMS AFTER FIRE? TIMING,STREAM,VEGETATION

322. 03 239 HOW DOES FIRE AND/OR FIRE EXCLUSION ALTER THE QUANTITY AND QUALITY OF STREAMFLOW REGIMENS AND AQUATIC INVERTEBRATES SO VITAL IN THE FISH FOOD WEB? FIRE EXCLUSION,HYDROLOGY,STREAM,FISH

323. 03 296 WHAT ARE THE QUANTITATIVE CHARACTERISTICS OF TIME, AREA, TOPOGRAPHIC, AND CLIMATIC DIMENSIONS RELATIVE TO THE HISTORIC INFLUENCE ON OCCURRENCE OF WILDFIRE IN CONIFEROUS FOREST SYSTEMS? FIRE HISTORY

324. 03 373 PERHAPS ONE OF THE GREATEST NEEDS TO PERSUE RESEARCH IN FIRE ECOLOGY IS THE LOCATION OF A NUMBER OF EXPERIMENTAL PLOTS REPRESENTATIVE OF SPECIFIC HABITAT TYPES THAT HAVE A WELL DOCUMENTED FIRE HISTORY AND VARY IN FREQUENCY AND INTENSITY OF THOSE FIRES. THESE SHOULD INCLUDE EXTREMES OF HIGH FREQUENCY AND COMPLETE FIRE EXCLUSION IN AS FAR AS POSSIBLE. MY RESEARCH INTERESTS WOULD INCLUDE (1) THE EFFECT OF FIRE HISTORY ON THE GEOGRAPHICAL LOCATION OF DISEASES (OR LACK THEREOF) AND THE EFFECTS OF THESE DISEASES ON SUBSEQUENT SITE PRODUCTIVITY AND SUCCESSIONAL PATTERNS AND (2) THE EFFECT OF FIRE HISTORY ON POPULATIONS OF BENEFICIAL MICROORGANISMS (INCLUDING DECAY FUNGI, MYCORRHIZAL FUNGI, AND NITROGEN FIXING MICROORGANISMS) AS THEY AFFECT SITE PRODUCTIVITY AND SUCCESSIONAL DEVELOPMENT. POPULATIONS OF SOIL MICROORGANISMS AS AFFECTED BY FIRE AND VEGETATIONAL HISTORY MAY PLAY A MORE IMPORTANT ROLE IN SUCCESSIONAL HISTORY AND SITE PRODUCTIVITY THAN HAS BEEN ASCRIBED TO THEM TO DATE. FIRE HISTORY,DISEASE,VEGETATION,PRODUCTIVITY,SUCCESSION,MICRO ORGANISM,NUTRIENTS

325. 03 400 IF WILDFIRE IS A KEY IN THE DEVELOPMENT OF VEGETATIVE PATTERNS IN EASTERN MONTANA PONDEROSA PINE FORESTS, WHAT SUBSTITUTES ARE AVAILABLE IF IT IS DECIDED TO RETAIN THESE PATTERNS? OR UNDER WHAT CONDITIONS COULD WE USE WILDFIRE? FIRE EXCLUSION,MANIPULATION COMPARISON,MOSAIC,FIRE EFFECTS

326. 03 429 WHAT AFFECT DOES SAGEBRUSH CONTROL BY FIRE IN CONIFEROUS FOREST MEADOWS HAVE ON NON-GAME SPECIES, I.E. SPARROWS, RODENTS, ETC.? SHRUBLAND,SMALL MAMMAL,BIRD

327. 03 429 WHAT IS THE EFFECT OF DIFFERENT DEGREES OF DUFF CONSUMPTION BY FIRE AS SEEN IN THE CHANGES IN: SOIL NUTRIENT QUANTITIES REMAINING, MICROBIAL POPULATION RESPONSE, SOIL WATER INFILTRATION RATES, MOISTURE HOLDING CAPACITY, AND SUBSEQUENT REGENERATION SUCCESS OF LODGEPOLE PINE, PONDEROSA PINE, DOUGLAS FIR, ALPINE FIR, AND SAGEBRUSH? FUEL REDUCTION,NUTRIENTS,MICROORGANISM,SOIL-WATER RELATIONS,REPRODUCTION

328. 03 429 WHAT IS THE RELATION BETWEEN FIRE INTENSITY, FUEL LOADING, FUEL SPECIES, AND FUEL CONSUMPTION AND HEATING AT VARIOUS DEPTHS IN UNCONSUMED DUFF LAYER? FIRE INTENSITY,FIRE BEHAVIOR

329. 03 429 WHAT SEASON OR MONTH WILL GIVE THE BEST RESULTS FOR NUTRIENT CYCLING FROM BROADCAST BURNING OF LOGGING SLASH IN LODGEPOLE PINE BOTH ON NORTH AND SOUTH FACING SLOPES, EAST OF THE CONTINENTAL DIVIDE IN MONTANA? FUEL REDUCTION,NUTRIENTS,TIMING,TOPOGRAPHY

330. 03 429 WHEN DOZER SCARIFYING, PILING AND BURNING IN LODGEPOLE PINE, IS THERE ONE RANGE OF CLEAN-UP PERCENTAGES WHICH GIVE BETTER VEGETATIONAL REPRODUCTION RESULTS THAN ANOTHER? E.G. WOULD THE LEAVING OF APPROX. 40 TO 50% OF THE SLASH GIVE BETTER RESULTS THAN LEAVING ONLY 20 TO 30%? FUEL REDUCTION,FUEL REDUCTION,REPRODUCTION,VEGETATION,LITTER

331. 03 430 IN THE INTERMCUNTAIN WEST, WHAT INTERVAL OF PRESCRIBED FIRE IS BEST TO KEEP AREAS IN SERAL BRUSH SPECIES ALONG WITH ADEQUATE ESCAPE COVER? HABITAT TYPES INVOLVED ARE: GRAND FIR-QUEEN BEADLILLY, DOUGLAS FIR-NINEBARK, DOUGLAS FIR-TWINFLOWER, PONDEROSA PINE-BITTERBRUSH, AND DOUGLAS FIR-SNOWBERRY. SHRUB UNDERSTORY,CONIFEROUS FOREST,WILDLIFE,PRESCRIBED FIRE,COMMUNITY

332. 03 433 ARE INTRODUCED GRASS SPECIES MORE SUSCEPTIBLE TO KILLING BY FIRE THAN NATIVE GRASSES? FIRE EFFECTS,GRASSLAND,MORTALITY

333. 03 433 WOULD PRESCRIBED BURNING OF OVERGRAZED MEADOWS AND NATURAL GRASS OPENINGS FAVOR QUICKER RESPONSE AND RECOVERY OF DESIRABLE GRASSES AND FORBS IF LIVESTOCK USE IS DEFERRED FOLLOWING BURNING? WHAT, IF ANY, WOULD BE THE BENEFITS OF SUCH PRESCRIBED BURNING TO BIG GAME WILDLIFE HABITAT? PRESCRIBED FIRE,HERBAGE UNDERSTORY,GRASSLAND,HERBIVORY,DOMESTIC LIVESTOCK,FIRE EFFECTS,WILDLIFE,GAME ANIMAL

334. 03 434 AS OUR FORESTS BECOME MORE AND MORE VALUABLE TO THIS AND FUTURE GENERATIONS, HOW CAN WE ACHIEVE THE RECOGNITION NEEDED OF FUEL MANAGEMENT AND THE NEED TO DISPOSE OF FUEL AS THE ONLY POSITIVE MEANS OF FIRE PREVENTION? PUBLIC REACTION

335. 03 434 WE NEED A MEANS OF PRESCRIBING CONDITIONS NECESSARY TO ACCOMPLISH A PARTICULAR OBJECTIVE IN USING FIRE AS A MEANS OF FUEL REDUCTION. IT MIGHT BE POSSIBLE TO PROGRAM A COMPUTER WITH KNOWN ENTITIES SUCH AS FUEL VOLUME, AGE OF SLASH DISTRIBUTION, HABITAT TYPE, MOISTURE CONTENT, WEATHER CONDITIONS, ASPECT, SLOPE, ETC. IF THIS CAPABILITY WERE AVAILABLE, IT COULD BE APPLIED TO NATURAL ACCUMULATIONS AS WELL AS LOGGING SLASH. FUEL REDUCTION,FIRE BEHAVIOR,PRESCRIBED FIRE

336. 03 435 WHAT IS THE EFFECT OF THUNDERSTORM PRECIPITATION INTENSITY AND DURATION ON LIGHTNING FREQUENCY AND UPON IGNITION PROBABILITY IN LODGEPOLE PINE FORESTS? LIGHTNING-CAUSED FIRE,FIRE FREQUENCY,FLAMMABILITY

337. 03 436 ARE EAGLE AND HAWK NESTING SITES AFFECTED BY SLASH BURNING IN THE FALL? BIRD,SMOKE EFFECTS,FIRE EFFECTS,PRESCRIBED FIRE,TIMING,COMMUNITY

338. 03 436 ARE SOME TREE SPECIES PHYSIOLOGICALLY DAMAGED BY SMOKE? SMOKE EFFECTS,CROWN

339. 03 436 WHAT EFFECT DOES THE ASH AND CHARRED MATERIAL HAVE ON THE FISHERIES IN A PARTICULAR STREAM SO FAR AS THE OXYGEN LEVEL IS CONCERNED?
FISH,ASH,CHARCOAL,STREAM,FIRE EFFECTS

340. 03 436 WHAT EFFECTS DO SPRING BURNS HAVE ON INCREASED EROSION POTENTIAL, MOISTURE RETENTION AND PRODUCTIVITY, AS COMPARED WITH FALL BURNS? PRESCRIBED FIRE,TIMING,SOIL-WATER RELATIONS,SOIL EROSION

341. 03 437 WHAT MIGHT BE THE EFFECT OF BROADCAST BURNING IN SEROTINOUS LODGEPOLE PINE CLEARCUTS, COMPARED WITH DOZER PILING, BURNING AND SCARIFICATION, AS OBSERVED IN QUANTITY OF REPRODUCTION? PRESCRIBED FIRE,REPRODUCTION,SEED,CONIFEROUS FOREST,HUMAN DISTURBANCE,MANIPULATION COMPARISON

342. 03 438 ARE THERE QUANTITATIVE MEASURES OF DETERMINING STAGES OF ECOLOGICAL FIRE CYCLES AND THE EFFECTS OF KEEPING FIRE FROM PLANT COMMUNITIES? SUCCESSION,FIRE FREQUENCY,FIRE EXCLUSION,FIRE EFFECTS

343. 03 438 WHAT VARIOUS COMBINATIONS OF FUEL CONDITIONS AND WEATHER WILL ALLOW FIRE UNDER STANDING PONDEROSA PINE WITH THE EXPECTATION OF KILLING VERY FEW TREES IN EXCESS OF TWO INCHES D.B.H.? PRESCRIBED FIRE,CLIMATE,FIRE INTENSITY,CONIFEROUS FOREST,STEM,ORGAN,MORTALITY,FIRE EFFECTS

344. 03 439 UNDER WHAT CONDITIONS WILL A SOUTH-FACING SLOPE PRESENT NATURAL REGENERATION PROBLEMS AFTER A CROWN BURN IN PONDEROSA PINE? CROWN BURN,REPRODUCTION,TOPOGRAPHY,VEGETATION

345. 03 439 WHAT IS THE EFFECT OF DECREASING THE FIRE FREQUENCY AT VARIOUS INTENSITIES, AS SEEN IN THE RATE OF FOREST ENCROACHMENT ON RANGE LANDS? FIRE FREQUENCY,FIRE EXCLUSION,ECOTONE,SUCCESSION,FIRE INTENSITY,GRASSLAND,VEGETATION

346. 03 439 WHAT IS THE EFFECT OF INCREASING PERCENT OF CROWN SCORCHING OF PONDEROSA PINE DURING A FIRE, AS SEEN IN THE PROBABILITY OF TOTAL TREE MORTALITY FOLLOWING THE FIRE? HEAT EFFECTS,MORTALITY,ORGANISM,VEGETATION

347. 03 440 IF FIRE WERE TO CONSUME LARGE FORESTED AREAS OF EASTERN MONTANA PONDEROSA PINE, WHAT CAN WE EXPECT FROM THE INCREASE IN GROUND WATER (ANNUAL PRECIPITATION THAT NORMALLY WOULD HAVE BEEN TRANSPIRED BY THE TREES, BUT WOULD NOW PERCOLATE DOWN)? COULD SALINE SEEPS DEVELOP? WOULD FLOWS INCREASE AT SPRINGS? SOIL-WATER RELATIONS,FIRE EFFECTS,AREA SIZE,NUTRIENTS,ELEMENTS,COMPOUNDS,CONIFEROUS FOREST

348. 03 440 IN EASTERN MONTANA PONDEROSA PINE, IS THE GENERAL DENDRITIC PATTERN OF OUR FORESTED LANDS BASED MOSTLY ON A SOIL-MOISTURE RELATIONSHIP OR HAS WILDFIRE SOMEHOW INFLUENCED THIS PATTERN? IF FIRE HAS CONTRIBUTED TO THIS PATTERN, IN WHAT AREAS (OR AREA CHARACTERISTICS) CAN WE EXPECT PONDEROSA PINE ENCROACHMENT? HOW IS FIRE PROTECTION INFLUENCING THE VEGETATIVE PATTERNS IN THIS COUNTRY? FIRE EFFECTS,MOSAIC,ECOTONE,AREA SIZE,CONIFEROUS FOREST,DISPERSION,SOIL-WATER RELATIONS

349. 03 444 ARE THERE PRACTICAL GUIDELINES EXISTANT FOR PROGRESSIVE UNDERSTORY BURNING, THAT IS, REDUCING HEAVY FUEL LOADS THROUGH A SERIES OF PRESCRIBED FIRES AT A GIVEN LOCATION? PRESCRIBED FIRE,GENERAL FIRE MANAGEMENT,FIRE INTENSITY

350. 03 447 WHAT IS THE RATE OF HYDROLOGIC RECOVERY ON BROADCAST BURN AREAS AS COMPARED TO THE RATE IN SIMILAR STANDS RECEIVING MECHANICAL SITE PREPARATION? HUMAN DISTURBANCE,MANIPULATION COMPARISON,WATERSHED,SOIL-WATER RELATIONS,PRESCRIBED FIRE

351. 03 653 CUTTHROAT TROUT POPULATIONS STILL EXIST IN SEVERAL MOUNTAIN HEADWATER STREAMS. WHAT ECOLOGICAL EFFECTS DO YOU FEEL CAN BE RELATED TO THIS SPECIES CONCERNING FIRE? STREAM,FISH,FIRE EFFECTS,POPULATION

352. 03 653 TO WHAT DEGREE IS SILTATION INCREASED IN STREAMS IN BURNED AREAS, PARTICULARLY HEADWATER STREAMS? FIRE EFFECTS,STREAM,SOIL EROSION,ECOSYSTEM

353. 03 653 WHAT ARE THE EFFECTS OF NEW BURNS ON AQUATIC LIFE AS OBSERVED IN STREAM TEMPERATURE? STREAM,FIRE EFFECTS,FISH,INSECT

354. 03 718 IN THE AREA NORTH OF WHITEHALL, MONTANA, EXTENSIVE DOUGLAS FIR STANDS GROW IN MARGINAL SOIL SITES WITH ONLY 12-14 INCHES OF PRECIPITATION. VIGOR IS VERY LOW IN THE FIR. ENCROACHMENT OF FIR INTO NATURAL OPENINGS IS VERY EXTENSIVE. THIS IS A CHRONIC WILDFIRE AREA. BOTH STOCK GRAZING AND PARTICULARLY FIRE PROTECTION, INFLUENCE FIR ENCROACHMENT. WHAT IS THE ROLE OF WILDFIRE IN THIS VEGETATIVE ASPECT, IN THE MAINTENANCE OF MORE EXTENSIVE GRASSLAND TYPES WHICH ARE INTERSPERSED WITH MORE FAVORABLE TIMBER SITES? HOW HAS FIRE PROTECTION INFLUENCED ELK FORAGE AND DEER COVER? IS WOODY FUEL NOW CONCENTRATED ENOUGH THAT PRESCRIBED BURNING WOULD BE HOT ENOUGH TO IMPART HYDROPHOBIC PROPERTIES TO THE SOIL? SPRUCE BUDWORM INFESTATION IS EXTREMELY HIGH ON FIR ENCROACHMENT SITES. IS FIRE PROTECTION ENCOURAGING ESTABLISHMENT OF LOW VIGOR FIR STANDS WHICH ARE MORE SUSCEPTIBLE TO BUDWORM INFESTATION AND FIRE HAZARD? IS FIRE PROTECTION, AND THE ASSUMED INCREASE IN ENCROACHMENT AND BUDWORM INFESTATION BUILDING A GREATER FIRE HAZARD WHICH MAY THREATEN LARGER AREAS? WOULD WILDFIRES MAINTAIN FIRE CLIMAX VEGETATIVE TYPES WITH STABLE WATERSHEDS, HIGH VIGOR TIMBERED SITES WITH LOWER INTENSITY BUDWORM INFESTATIONS, AND SUITABLE ELK WINTER RANGES? SUCCESSION,GRASSLAND,DISPERSION,FIRE EXCLUSION,GAME ANIMAL,FUEL/BIOMASS ACCUMULATION,FIRE INTENSITY,SOIL-WATER RELATIONS,INSECT,PRODUCTIVITY,AREA SIZE

355. 03 718 IN YOUR OPINION, IS THERE ANY SIGNIFICANT DIFFERENCE BETWEEN EFFECTS OF PRESCRIBED BURNING FOR INSECT CONTROL, SITE PREPARATION, ETC., AND THE EFFECTS OF WILDLAND NATURAL FIRE WITH REGARD TO THESE SAME RESPONSES? MANIPULATION COMPARISON,PRESCRIBED FIRE,INSECT,REPRODUCTION

356. 03 718 WHAT IS THE TIME DIFFERENTIAL IN THE REDUCTION OF CHARRED LOGGING WASTE AS COMPARED TO UNTREATED WASTE? FUEL REDUCTION,DECOMPOSITION,CHARCOAL,MANIPULATION COMPARISON

357. 03 718 WHAT IS THE TOTAL EFFECT OF FIRE ON AVAILABLE NUTRIENTS FOR TREE GROWTH OVER A ROTATION PERIOD? NUTRIENTS,FUEL/BIOMASS ACCUMULATION

358. 03 719 DOES FINE ASH DECREASE SOIL POROSITY AND INCREASE RUN OFF? IF SO, FOR HOW LONG? SOIL-WATER RELATIONS,ASH,SOIL

359. 03 719 TO WHAT DEGREE CAN CONTROLLED BURNING BE USED TO CONTROL SPRUCE BUD WORM OR OTHER PESTS? INSECT,PRESCRIBED FIRE,FIRE EFFECTS,COMMUNITY,CONIFEROUS FOREST

360. 03 719 TO WHAT DEGREE CAN POLE SIZE TIMBER BE SCORCHED BY FIRE BEFORE IT DIES? IS THERE A CAMBIUM TEST WHICH WOULD AID THE FORESTER IN PLANNING POST-FIRE FOREST REHABILITATION? ORGAN,FIRE EFFECTS,STEM,MORTALITY,HEAT EFFECTS

361. 03 719 WHAT IS DEGREE OF CHANGE IN SNOW PACK OR RUN OFF CHARACTERISTICS ON VARIOUS TYPES OF BURNED OVER BUT STANDING VEGETAL COVER? SNOW,MICROCLIMATE,ASH,CHARCOAL,SOIL-WATER RELATIONS,SNAG

362. 03 743 IS THE FUEL ACCRETION PROCESS IN DRY FOREST SITES ONE OF DIMINISHING ACCRETION WITH TIME OR UNLIMITED ACCRETION WHEN FIRE HAS BEEN EXCLUDED? FUEL/BIOMASS ACCUMULATION,FIRE EXCLUSION,CLIMATE,CONIFEROUS FOREST

363. 03 743 THE USE OF FIRE IN STANDING PONDEROSA PINE IS LIMITED BECAUSE OF POSSIBLE SUBSEQUENT BARK BEETLE ATTACKS. THIS AREA OF STUDY IS VIRTUALLY DEVOID OF GOOD INFORMATION. SUCH INFORMATION WOULD ASSIST IN DETERMINING BURNING SCHEDULES, ACCEPTABLE FIRE INTENSITIES (IN RELATION TO LOCAL BEETLE POPULATIONS AND TIME OF YEAR OF BURN) AND GENERAL REALIZATION OF UNDERSTORY FIRE LIMITATIONS OR POTENTIAL. FIRE EFFECTS,INSECT,STEM,PRESCRIBED FIRE,TIMING,FIRE INTENSITY,CONIFEROUS FOREST,COMMUNITY

364. 03 744 WE HAVE CERTAIN AREAS IN LODGEPOLE-SPRUCE TYPE THAT WERE BROADCAST BURNED AFTER LOGGING THAT HAVE NOT REGENERATED AFTER 3-4 YEARS. CROWN BURNS IN THE SAME VICINITY HAVE REGENERATED VERY QUICKLY. DOES INTENSITY OF BURN DETERMINE REGENERATION POTENTIAL OF LODGEPOLE? CAN SOIL BE "STERILIZED" FOR A PERIOD WITH A VERY HOT FIRE? PRESCRIBED FIRE,FIRE EFFECTS,CROWN BURN,REPRODUCTION,SOIL,NUTRIENTS,FIRE INTENSITY,COMMUNITY

365. 03 745 HOW MUCH FIRE (HEAT) CAN A TREE TAKE BEFORE IT BECOMES WEAKENED TO THE POINT THAT BARK BEETLES ARE ATTRACTED TO IT? OTHER INSECTS AND DISEASE? HEAT EFFECTS,MORTALITY,INSECT,DISEASE,STEM,FIRE EFFECTS,ORGANISM

366. 03 745 HOW WOULD GREEN BELTS (UNTHINNED AREAS) AROUND OR THROUGH THINNING AREAS AFFECT FIRE SPREAD? HUMAN DISTURBANCE,MANIPULATION COMPARISON,PRESCRIBED FIRE,FIRE EXCLUSION

367. 03 745 SHOULD RESEEDING (GRASS, BROWSE SP. OR TREE SP.) BE IMPLEMENTED IMMEDIATELY AFTER A FIRE? TIMING,REPRODUCTION,SOIL EROSION,FIRE EFFECTS,MANIPULATION COMPARISON

368. 03 745 UNDER WHAT CONDITION MAY BROADCAST BURNING BE FEASIBLE FOR HAZARD REDUCTION IN THINNED STANDS? PRESCRIBED FIRE,FLAMMABILITY,FUEL REDUCTION

369. 03 745 WHAT IS THE ADVISABILITY OF FERTILIZING A SEVERLY BURNED AREA? HOW SEVERE A BURN WOULD BE DETRIMENTAL TO SOIL NUTRIENTS? SOIL,NUTRIENTS,FIRE INTENSITY,FIRE EFFECTS

370. 03 745 WHAT IS THE EFFECT OF FIRE EXCLUSION ON INSECT ACTIVITY? DISEASE SPREAD? FIRE EXCLUSION,INSECT,DISEASE

371. 03 745 WHAT KIND OF THINNING BLOCK LAYOUT WOULD TEND TO REDUCE THE CHANCE OF FIRE SPREAD IN PRECOMMERCIAL THINNING AREAS? HUMAN DISTURBANCE,FIRE INTENSITY,GENERAL FIRE MANAGEMENT,AREA SIZE

372. 03 745 WHAT PRACTICAL AND ECONOMICAL STEPS MIGHT BE TAKEN TO REDUCE HAZARD IN FRESH PRECOMMERCIAL THINNING SLASH? GENERAL FIRE MANAGEMENT,HUMAN DISTURBANCE,FLAMMABILITY,ECONOMIC EFFECTS

373. 03 745 WILL FIRE IN A THINNED STAND TEND TO STAY ON THE GROUND AS OPPOSED TO CROWNING? WHAT ARE THE EFFECTS OF VARIOUS SPACING? WHAT SPACING INHIBITS SPREAD OF FIRE? HUMAN DISTURBANCE,GROUND FIRE,CROWN BURN

374. 03 745 WILL RAIN ON THE ASH IN A BURN CAUSE A LAYER IMPERMEABLE TO SEEDS TO BE FORMED? IF SO, HOW LONG WILL THIS LAYER LAST? (THIS CONDITION IS REPORTED TO OCCUR IN THE SOUTHWEST.) MICROCLIMATE,ASH,SOIL-WATER RELATIONS,FIRE EFFECTS,SEED,REPRODUCTION

375. 04 108 CAN NATIVE HERBIVORE (BISON, ELK, DEER, ANTELOPE, PRAIRIE DOGS) DISTRIBUTION BE MANIPULATED BY PERIODIC PRESCRIBED BURNING IN PONDEROSA PINE GRASSLAND IN THE BLACK HILLS? GAME ANIMAL,DISPERSION,PRESCRIBED FIRE,HERBIVORY,GRASSLAND

376. 04 108 WHAT FIRE TEMPERATURES AND FLAME HEIGHTS ARE NECESSARY TO KILL VARIOUS SIZE PONDEROSA PINE SEEDLINGS AND SAPLINGS WHICH HAVE INVADED GRASSLANDS ADJACENT TO AND WITHIN THE BLACK HILLS? WHAT FREQUENCY OF PRESCRIBED BURNING IS REQUIRED TO PROHIBIT OR REDUCE INVASION OF PONDEROSA PINE INTO GRASSLANDS ADJACENT TO THE BLACK HILLS? FIRE INTENSITY,MORTALITY,REPRODUCTION,FIRE FREQUENCY,PRESCRIBED FIRE

377. 04 108 WHAT IS THE EFFECT OF BURNING, AT VARIOUS SEASONS, ON SOILS AND UNDERSTORY VEGETATION IN THE BLACK HILLS? (HYPOTHESIS: SLASH CAN BE BURNED MORE SAFELY AND WITH LESS DAMAGE TO SOILS AND VEGETATION DURING SPRING AND EARLY SUMMER MONTHS FOLLOWING PRECIPITATION THAN IN WINTER MONTHS.) TIMING,HERBAGE UNDERSTORY,SOIL,CLIMATE

378. 04 108 WHAT IS THE EFFECT OF SEASONAL BURNING ON FORAGE PRODUCTION AND SPECIES COMPOSITION IN GRASSLANDS ADJACENT TO AND WITHIN THE BLACK HILLS PONDEROSA PINE FOREST? (WHAT IS THE PROPER SEASON FOR PRESCRIBED BURNING IN THIS VEGETATION TYPE?)
GRASSLAND,PRODUCTIVITY,SPECIES DIVERSITY,PRESCRIBED FIRE

379. 04 159 CAN PRESCRIBED FIRE BE USED SAFELY AND EFFECTIVELY TO CONTROL STOCKING IN IMMATURE PINE STANDS?
AGE,PRESCRIBED FIRE,DENSITY,FUEL/BIOMASS ACCUMULATION

380. 04 159 IN FULLY-STOCKED PINE STANDS OF VARIOUS AGES AND SIZES, WHAT IS THE RELATION BETWEEN PRODUCTION AND DECOMPOSITION OF BIOMASS (HENCE, FUEL), IN TOTAL, AND BY MAJOR COMPONENTS? HAS FIRE EXCLUSION, IN FACT, MARKEDLY ALTERED THE FUEL ACCUMULATION REGIME? FIRE EXCLUSION,DENSITY,AGE ,SIZE CLASS,FUEL/BIOMASS ACCUMULATION,DECOMPOSITION,REPRODUCTION,MORTALITY

381. 04 159 IS IT POSSIBLE--AND SAFE--TO USE BROADCAST BURNING FOR FUEL AND HAZARD REDUCTION IN PRECOMMERCIALLY THINNED STANDS? PRESCRIBED FIRE,FUEL REDUCTION

382. 04 159 WHAT FACTUAL EVIDENCE EXISTS, OR CAN BE OBTAINED, TO SUPPORT THE POPULAR BELIEF THAT NON-CATASTROPHIC BURNS OCCURRED MORE OR LESS REGULARLY IN BLACK HILLS PINE STANDS IN PRE-SETTLEMENT TIMES? AND, FURTHER THAT THEIR EFFECTS WERE LARGELY BENEFICIAL IN TERMS OF REDUCED RISK OF CATASTROPHIC FIRES, NATURAL CONTROL OVER FOREST STOCKING, MORE FORAGE FOR GAME, AND INCREASED WATER PRODUCTION FROM FORESTED WATERSHEDS? GROUND FIRE,FIRE FREQUENCY,EXPERIMENT ORIENTED QUESTION,FUEL REDUCTION,FUEL/BIOMASS ACCUMULATION

383. 04 159 WHAT SPECIAL KIND OF BURNING ENVIRONMENT MUST PREVAIL TO FOSTER A NON-CATASTROPHIC, FUEL-REDUCTION-TYPE OF BURN IN STANDS OF VARIOUS CLASSES? HOW FREQUENTLY DO THESE SPECIAL BURNING CONDITIONS OCCUR? PRESCRIBED FIRE,FUEL REDUCTION

384. 04 161 COULD FIRE BE USED, TOGETHER WITH FOLLOWUP SEEDING OF HERBACEOUS AND/OR SHRUB SPECIES, AS BIOLOGICAL CONTROL OF TREE SPECIES THAT TEND TO REGENERATE TOO THICKLY UNDER CERTAIN CONDITIONS?
PLANTING,GRASSLAND,SHRUBLAND,COMPETITION,REPRODUCTION

385. 04 161 DO OLD BURNS (10 YEARS OR OLDER) IN WHICH TREES HAVE NOT REGENERATED TO A FULLY STOCKED STAND, CONTRIBUTE MORE RUNOFF AND SEDIMENT UNDER FLOOD PRODUCING PRECIPITATION, THAN OLD FOREST WITH VIRTUALLY UNDISTURBED FOREST FLOOR? DENSITY,HYDROLOGY,SOIL EROSION

386. 04 161 IS FIRE NECESSARY TO PROVIDE SUITABLE SITE CONDITION FOR ESTABLISHMENT AND VIGOROUS GROWTH OF CERTAIN TREE SPECIES--ALSO UNDERSTORY VEGETATION? IMPORTANT ELEMENTS OF WHICH SEEM TO REQUIRE NEAR MINERAL SOIL CONDITIONS FOR GERMINATION AND ESTABLISHMENT?
REPRODUCTION

387. 04 161 TO WHAT EXTENT DOES FIRE PLAY A ROLE IN SUCCESSION AND COMPOSITION OF FOREST STANDS? IS VIRTUAL EXCLUSION OF FIRE BY MODERN SUPPRESSION TECHNIQUES ALTERING BIOLOGICAL COMPOSITION OF FOREST ENVIRONMENT AND RESULTING IN UNDESIRABLE BUILDUP OF BIOMASS? FIRE EXCLUSION,SPECIES DIVERSITY,FUEL/BIOMASS ACCUMULATION,SUCCESSION

388. 04 161 TO WHAT EXTENT, AND UNDER WHAT CONDITIONS, ARE INFILTRATION AND PERCOLATION INHIBITED BY FORMATION OF HYDROPHOBIC SUBSTANCES DURING BURNS? SOIL-WATER RELATIONS

389. 04 449 CROWN FIRES ARE QUITE OFTEN A THREAT IN THE PONDEROSA PINE OF THE BLACK HILLS. EXTREME BURNING CONDITIONS MAY CAUSE CROWNING ANY TIME OF THE DAY OR NIGHT. BASED ON SLOPE, WHAT TREE SPACING WOULD ALLOW FULL STOCKING AND YET BE MOST DESIRABLE FOR SEPARATING TREE CROWNS TO PRECLUDE CROWN FIRE IGNITION? CROWN BURN,FIRE INTENSITY,AREA SIZE,TOPOGRAPHY,POPULATION

390. 04 449 HAS ANYONE CONSIDERED A CHEMICAL OR BIOLOGICAL TREATMENT OF PINE SLASH TO SPEED THE DECOMPOSITION AS A METHOD FOR REDUCTION OF FIRE HAZARD? DECOMPOSITION,COMPOUNDS,FUEL REDUCTION,CONIFEROUS FOREST,HUMAN DISTURBANCE

391. 04 449 IN BLACK HILLS PONDEROSA PINE,AT WHAT POINT DOES THE BURNING OF GROUND FUEL (DUFF) PASS THE POINT OF "CLEAN BURNING" AND BECOME DETRIMENTAL TO THE SOIL AND VEGETATION? WILL MUCH HEAT KILL THE ROOTS OF PLANTS AND TOO HOT A BURN PERMIT SOIL EROSION? HOW CAN WE MEASURE THE BURNING CONDITION THAT WILL PREVENT THIS? WE KNOW THAT THE FUEL VOLUME AND BURNING INDEX WILL DETERMINE THE INTENSITY ON THE SURFACE BUT WE NEED HELP TO DETERMINE THE UNDERGROUND EFFECT. WHAT CHANGES WILL SLOPE, ASPECT AND SOIL TYPE HAVE? DUFF,SOIL,HEAT EFFECTS,FIRE EFFECTS,TOPOGRAPHY,FIRE INTENSITY,ROOTS,SOIL EROSION,CONIFEROUS FOREST,ORGAN

392. 04 449 WE ARE CONSIDERING THE USE OF BROADCAST BURNING THROUGH THINNED PINE STANDS FOR FUEL REDUCTION. HOW MUCH IS REQUIRED TO KILL THE 2 TO 5 INCH PONDEROSA PINES? WILL CONTROLLED BURNING KILL OUT CERTAIN SPECIES OF GRASSES AND SHRUBS? PRESCRIBED FIRE,HEAT EFFECTS,STEM,CONIFEROUS FOREST,FUEL REDUCTION,SHRUB UNDERSTORY,HERBAGE UNDERSTORY

393. 04 659 FIRE SUPPRESSION IN BLACK HILLS PONDEROSA PINE OVER A PERIOD OF 70 PLUS YEARS HAS LED TO THE ESTABLISHMENT OF MANY "DOG HAIR" STANDS. IN MANY CASES, THESE STANDS HAVE BECOME SO DENSE THAT ALL OTHER PLANT SPECIES HAVE BEEN ELIMINATED. A) WHAT CHANGES HAVE THUS OCCURRED IN SOIL CHEMISTRY AND WHAT INFLUENCE HAVE THESE HAD ON THE PLANT COMMUNITY? B) WHAT INFLUENCE WILL PRESCRIBED FIRE HAVE ON SOIL CHEMISTRY AND THE PLANT COMMUNITY FOLLOWING PRE-COMMERCIAL THINNING? C) CAN PRE-SUPPRESSION FOREST CHARACTERISTICS BE RE-CREATED WITH THE USE OF PRESCRIBED FIRE? FIRE EFFECTS,SOIL,COMPETITION,FIRE EXCLUSION,PRESCRIBED FIRE,COMPOUNDS,HUMAN DISTURBANCE,CONIFEROUS FOREST

394. 04 833 ARE THERE ANY GUIDE LINES ESTABLISHED AS TO HOW OFTEN A STAND'S UNDERSTORY SHOULD BE BURNED BASED ON SPECIES AND TOTAL DRY WEIGHT ACCUMULATED ON THE FOREST FLOOR? GENERAL FIRE MANAGEMENT,FUEL/BIOMASS ACCUMULATION,PRESCRIBED FIRE,FIRE FREQUENCY,FIRE INTENSITY

395. 04 833 DOES A SURFACE FIRE OF MODERATE INTENSITY IN BLACK HILLS PONDEROSA PINE INCREASE THE POSSIBILITY OF A RESIDUAL STAND BEING ATTACKED BY BARK BEETLES? IF SO, HOW GREAT IS THIS INCREASE? INSECT,FIRE EFFECTS,GROUND FIRE,FIRE INTENSITY,STEM

396. 04 833 HOW GREAT IS THE INCREASE IN RUNOFF AFTER A PRESCRIBED BURN AS COMPARED TO AN UNBURNED STAND? SOIL-WATER RELATIONS,PRESCRIBED FIRE,MANIPULATION COMPARISON

397. 05 099 HOW DOES FIRE AFFECT THE MAJOR PROCESSES CONTROLLING MOVEMENT OF NUTRIENTS THROUGH A SINGLE ECOSYSTEM, AS CONTRASTED WITH A GROUP OF ADJACENT ECOSYSTEMS? IN OTHER WORDS, DOES FIRE MERELY CHANGE STRUCTURE AND ENVIRONMENT IN A MORE EXTREME WAY THAN CUTTING? DO DECOMPOSITION AND NUTRIENT INTERCHANGE AND UPTAKE, CHANGE IN RELATION TO CONCENTRATION OF IONS, REDUCTION IN SUBSTRATE, AND MORE EXTREME ENVIRONMENTS FOLLOWING FIRE, OR ARE THERE UNIQUE PROPERTIES OF FIRE (HIGH TEMPERATURES) THAT PRODUCE SPECIAL EFFECTS? CAN YOU DEVELOP A STRUCTURED MODEL FOR THE LUBRECHT WATERSHED, PREDICTING DIRECTION AND MAGNITUDE OF CHANGE IN NUTRIENT FLOW RATES AND COMPARTMENT LEVELS FOLLOWING INTENSE AND MODERATE FIRE? CAN YOU COUPLE YOUR KNOWLEDGE OF FIRE BEHAVIOR, AND HOW IT CHANGES THE ENVIRONMENT OF STANDS, WITH REED AND EMMINGHAM'S FOREST GROWTH AND SUCCESSION MODEL? NUTRIENTS,PRODUCTIVITY,SUCCESSION,MANIPULATION COMPARISON

398. 05 102 ARE EFFECTS OF FIRE ON MINERALIZATION OF TIED-UP NUTRIENTS REPLACED BY THE INCREASES OF WEATHERING, DUE TO EXPOSURE OF LITTER TO SUN, IN CLEARCUTTING? MANIPULATION COMPARISON,DECOMPOSITION,LITTER,NUTRIENTS,MICROCLIMATE

399. 05 102 HOW DOES THE IMPACT OF FIRE COMPARE WITH THAT OF OTHER DISTURBANCES: A) CLEARCUTTING B) SCARIFYING C) HERBICIDE TREATMENT: WITH RESPECT TO: A) PLANT COMPOSITION B) SUCCESSIONAL DYNAMICS C) MICROFLORA D) NUTRIENT RETENTION SYSTEMS E) WILDLIFE PALATABILITY OF VEGETATION AND ANIMAL POPULATION DYNAMICS? MANIPULATION COMPARISON,SPECIES DIVERSITY,VEGETATION,SUCCESSION,MICROORGANISM,NUTRIENTS, WILDLIFE

400. 05 102 TO WHAT EXTENT IS FIRE INVOLVED IN MAINTAINING SYSTEM PRODUCTIVITY WHERE NUTRIENT CAPITAL TENDS TO BE TIED UP IN LITTER? LITTER,NUTRIENTS,PRODUCTIVITY

401. 05 103 IF WE ASSUME THAT SOME WESTERN CONIFEROUS FORESTS HAVE EVOLVED WITH FIRE, HAVE THERE BEEN CHANGES IN ECOSYSTEM PROCESSES WITH THE CESSATION OF FIRE? I.E. HAS THE RATE OF MINERAL CYCLING BEEN ALTERED? IF SO, IN WHICH DIRECTION? FIRE EXCLUSION,NUTRIENTS

402. 05 103 WHAT ARE THE EFFECTS OF FIRE ON SECONDARY SUCCESSION? IS THE FREQUENCY, TIMING, OR INTENSITY OF THE FIRE MOST IMPORTANT ON 1) THE SUCCESSIONAL VECTOR AFTER THE BURN? 2) THE FIRST COVER TYPE TO ESTABLISH ON THE BURNED AREA? 3) THE RECOVERY TIME TO ORIGINAL STATE? SUCCESSION,TIMING,FIRE INTENSITY,FIRE FREQUENCY

403. 05 168 A. ARE THERE SERIOUS HARMFUL EFFECTS ASSOCIATED WITH EARLY SPRING BURNING IN THE STEEP NORTH-SLOPE DOUGLAS FIR-PHYSOCARPUS-PINEGRASS (FESCUE) CANYON HABITAT IN THE TRI-STATE UPLANDS? B. IF NOT, WHAT MIGHT BE THE PROPER FREQUENCY (TIME INTERVAL) FOR IMPROVING THESE HABITATS FOR LIVESTOCK GRAZING OR FOR BIG GAME USE? EXPERIMENT ORIENTED QUESTION,GAME ANIMAL,TIMING,PRESCRIBED FIRE

404. 05 168 A. DOES BROADCAST BURNING, AS A POST-CLEARCUT LOGGING SLASH TREATMENT, IN THE INTERIOR PACIFIC NORTHWEST TRUE FIR TYPE, ALTER THE PLANT COMPOSITION AND POST-LOGGING SUCCESSION AS COMPARED TO A NO-BURN SLASH TREATMENT? B. IF SO, WHAT ARE THE WILDLIFE HABITAT AND FORAGE PRODUCTION IMPLICATIONS ASSOCIATED WITH BURNING OR NO BURNING? C. IS THE TIME INTERVAL TO CANOPY CLOSURE, OR REFORESTATION PERIOD, AFFECTED BY FIRE? D. DOES MACHINE PILING (OR WINDROWING) AND BURNING PRODUCE COMPARABLE PATTERNS OF VEGETATION AND SUCCESSION FOUND UNDER SEPARATE TREATMENTS IN A. FUEL REDUCTION,SPECIES DIVERSITY,SUCCESSION,FUEL/BIOMASS ACCUMULATION,PRODUCTIVITY,ANIMALS,MANIPULATION COMPARISON

405. 05 168 A. IS IT PRACTICAL TO SUPPRESS MOUNTAIN MEADOW, OR SUBALPINE MEADOW, TREE INVASION BY LATE SEASON BURNING? B. IF SO, WHAT IS THE SUSCEPTIBILITY FOR THE DIFFERENT SPECIES AND AT WHAT AGE, OR HEIGHT CLASSES, CAN CONTROL BEST BE ACHIEVED? SUCCESSION,MORTALITY,VEGETATION,AGE,SIZE CLASS

406. 05 168 WHAT IS THE EFFECT OF INCREASED HEATING ON THE VIABILITY OF ROOT SYSTEMS OF BIG GAME SHRUBS? HEAT EFFECTS,ROOTS,SHRUBLAND

407. 05 168 WHAT SOCIOLOGICAL AND/OR PSYCHOLOGICAL IMPLICATIONS MUST BE EXAMINED IN ORDER TO EDUCATE THE PUBLIC FOR THE ACCEPTANCE OF FIRE AS A MANAGEMENT TOOL? EXPERIMENT ORIENTED QUESTION,PUBLIC REACTION,SOCIAL EFFECTS

408. 05 169 WHAT EFFECT DOES FIRE HAVE ON FUNGAL AND MICROBIAL SUCCESSION AND PROCESSES? E.G., IN THE AFTERMATH OF VARIOUS FIRE INTENSITIES, IN WHAT WAYS DO SPECIES, POPULATIONS, AND ACTIVITIES CHANGE IN COMPARISON WITH UNBURNED HABITATS: A. NITROGEN FIXATION B.

DECOMPOSITION-DECOMPOSER SPECIES SUCCESSION AND ACTIVITY. C. MYCORRHIZA FORMATION AND SUCCESSION OF MYCORRHIZA FUNGI D. SULPHUR FIXATION. E. ROOT PATHOGENS? FUNGUS,MICROORGANISM,SUCCESSION,DECOMPOSITION,FIRE INTENSITY,HEAT EFFECTS

409. 05 240 FIRE RESULTS IN RAPID RELEASE OF VARIOUS PLANT GROWTH ELEMENTS THAT ARE NORMALLY RELEASED IN SLOW DECAY. IS RAPID RELEASE LIKELY TO BENEFIT CERTAIN PLANTS AND IF SO, WHICH KIND? THIS COULD HELP TO DETERMINE PLANT SUCCESSION IN A FIRE SWEPT AREA. NUTRIENTS,VEGETATION,SUCCESSION

410. 05 240 INTENSE HEAT OXIDIZES MANY ELEMENTS AND CAUSES THEM TO DISPERSE AS GASES. DOES A SLOW BURNING FIRE CONSERVE MORE FOOD ELEMENTS FOR PLANTS, THUS STIMULATING RAPID PLANT GROWTH, THAN A FIERCELY HOT FIRE? NUTRIENTS,FIRE INTENSITY

411. 05 241 WHAT EFFECT DOES FIRE, IN CONIFEROUS FOREST HABITAT, HAVE ON BIRD, MAMMAL, INSECT, AND PLANT POPULATIONS AND ON THE SPECIES COMPOSITION: (1) UNDER DIFFERENT FIRE INTENSITIES? (2) IN "OLD GROWTH", AS OPPOSED TO THE VARIOUS STAGES OF FOREST REGENERATION AND GROUND SURFACE CONDITIONS? (3) IN VARIOUS CONIFEROUS FOREST TYPES? (4) UNDER DIFFERENT EXPOSURES AND ELEVATIONS? (5) AT VARIOUS TIMES OF YEAR OR SEASONS? WHY DO THESE CHANGES TAKE PLACE? HOW LONG DOES IT TAKE AN AREA TO RETURN TO ITS PRE-FIRE ANIMAL AND PLANT STATUS? POPULATION,BIRD,INSECT,SMALL MAMMAL,GAME ANIMAL,SUCCESSION

412. 05 247 WHEN CONTROLLED BURNING IS USED TO REHABILITATE 25 YEAR+ BRUSH SPECIES MANAGED FOR BIG GAME BROWSE, WHAT ARE THE MEASURED CHANGES IN NUTRIENT AND SEDIMENT LOADS OF DOWNSLOPE STREAMS? NUTRIENTS,STREAM,TOPOGRAPHY,SHRUBLAND,MOSAIC,ZONATION

413. 05 453 DOES SLASH DISPOSAL IMPROVE THE VISUAL EFFECT OF LOGGING? WHAT IS THE LONG RANGE VISUAL EFFECT? AESTHETICS,FUEL REDUCTION,PUBLIC REACTION,HUMAN DISTURBANCE

414. 05 453 HOW CAN WE PREDICT THE VOLUME OF SMOKE THAT WILL BE PRODUCED FROM AN ACREAGE? HOW WILL IT AFFECT AIR QUALITY UNDER GIVEN CONDITIONS? WHAT AFFECT DOES SPECIES, VOLUME OF SLASH, MOISTURE CONTENT, ATMOSPHERIC CONDITIONS HAVE ON SMOKE PRODUCTION FROM SLASH? AIR POLLUTION,AREA SIZE,AESTHETICS,FUEL REDUCTION,PUBLIC REACTION,MODEL,CLIMATE

415. 05 453 VERY LITTLE HAS BEEN DONE ON THE ECONOMICS OF SLASH DISPOSAL. I WOULD LIKE TO SEE SOME STUDIES ON THE ECONOMICS OF VARIOUS DISPOSAL METHODS AS RELATES TO THE AMOUNT OF SLASH REMAINING AND THE RESULTANT RISK, INCLUDING NO TREATMENT. ECONOMIC EFFECTS,PRESCRIBED FIRE,FUEL REDUCTION

416. 05 453 WHAT ARE THE EFFECTS OF SURFACE FIRE ON VARIOUS SPECIES IN RELATIONSHIP TO THEIR AGE AND BARK THICKNESS OR NATURAL FIRE RESISTANCE? FIRE INTENSITY,STEM,MORTALITY,GROUND FIRE

417. 05 453 WHAT IS THE EFFECT ON REFORESTATION OF REMOVING ALL LARGE CULL LOGS BUT LEAVING THE FIRE SLASH (6" DIAMETER AND SMALLER MATERIAL)? WHAT ARE THE OPTIMUM AMOUNTS (ANNUAL ACREAGES) OF SLASH THAT CAN BE LEFT UNTREATED AND STILL HAVE AN ACCEPTABLE RISK? REPRODUCTION,DECOMPOSITION,HUMAN DISTURBANCE,FUEL REDUCTION,AREA SIZE

418. 05 453 WHAT IS THE NET EFFECT OF DIFFERENT INTENSITIES OF FIRE ON REFORESTATION? REMOVAL OF CERTAIN AMOUNTS OF FUEL MAY BE CONSIDERED BENEFICIAL: BEYOND WHAT POINT MAY THAT BE CONSIDERED A DETRIMENT? FIRE INTENSITY,FIRE EFFECTS,FUEL REDUCTION,REPRODUCTION

419. 05 453 WHAT IS THE RELATIVE EFFECTIVENESS OF VARIOUS DISPOSAL METHODS AS OBSERVED IN FUEL VOLUMES IN UNHARVESTED AREAS AND RESIDUE AFTER VARIOUS TREATMENT? FUEL REDUCTION,ECONOMIC EFFECTS,MANIPULATION COMPARISON

420. 05 455 IN MANAGEMENT OF DOUGLAS-FIR WE ARE SUBSTITUTING REMOVAL OF TIMBER FOR FIRE, BLOWDOWN, ETC., THAT PROVIDED OPENINGS LEADING TO ESTABLISHMENT OF THE DOUGLAS-FIR STANDS WE NOW HAVE. WE THEN REGENERATE TO DOUGLAS FIR. THERE HAS BEEN SOME SUGGESTION THAT THIS PRACTICE OF MONOCULTURE IS BAD AND THAT CONTINUED SUCCESSIONS OF DOUGLAS-FIR WILL LEAD TO DEGENERATION OF SITES. DOES STUDY ALONG THESE LINES BEAR THIS OUT? IF SO, SHOULD WE ESTABLISH ARTIFICIALLY INDUCED CLIMAX STANDS TO BREAK THIS PATTERN? CAN PROVISION OF MINIMUM PROPORTIONS OF OTHER SPECIES IN THE DOUGLAS-FIR STANDS OVERCOME THE UNDESIRABLE EFFECTS OF PURE STANDS? SUCCESSION,FIRE EFFECTS,MOSAIC,CONIFEROUS FOREST,SPECIES DIVERSITY,PRODUCTIVITY

421. 05 455 SOME OPINION IS NOW BEING EXPRESSED THAT WE SHOULD USE PRESCRIBED FIRE TO REDUCE FUEL ACCUMULATION AND/OR MANIPULATE STOCKING LEVELS, UNDERSTORY PLANT COMMUNITIES, ETC., AND REDUCE WILD FIRE INTENSITIES. WHAT IS KNOWN OF FUEL QUANTITY-FIRE INTENSITY RELATIONSHIPS? ARE THERE ANY CONJECTURES ON PROJECTING THE OPTIMUM PERIODIC SCHEDULING OF PRESCRIBED BURNS? E.G. AT 10 YEARS AFTER INITIAL ESTABLISHMENT, 10 YEARS AFTER THAT, THEN HANDLE THE INCREASES IN FUELS BEYOND THAT POINT THROUGH COMMERCIAL THINNING, ETC? FUEL/BIOMASS ACCUMULATION,FUEL REDUCTION,FIRE INTENSITY,TIMING,FIRE FREQUENCY,PRESCRIBED FIRE,HUMAN DISTURBANCE,ECOSYSTEM,GROUND FIRE

422. 05 455 WHAT IS KNOWN OF THE ABILITY OF IMMATURE STANDS TO SURVIVE GROUND FIRES? IS THERE A MEANS OF PREDICTING TREE SURVIVAL IF PRESCRIBED FIRE IS USED AS A FUEL REDUCTION TOOL? GROUND FIRE,MORTALITY,MODEL,PRESCRIBED FIRE,FUEL REDUCTION

423. 05 457 IF FIRE PROTECTION ACTIVITIES HAVE BEEN A FACTOR IN CONVERSION OF PONDEROSA PINE STANDS TO ASSOCIATED SPECIES, HOW IMPORTANT IS IT? DOES IT REALLY MAKE A DIFFERENCE WHAT SPECIES IS THERE? SUCCESSION,FIRE EXCLUSION,SPECIES DIVERSITY,HUMAN ECOLOGY

424. 05 457 IS THE EFFECT OF WIDESPREAD IRRIGATION AN IMPORTANT FACTOR IN THUNDERSTORM FORMATION? LIGHTNING-CAUSED FIRE

425. 05 457 IS THERE A RELATIONSHIP BETWEEN THUNDERSTORM MOVEMENT AND MAGNETIC FIELDS IN THE EARTH? LIGHTNING-CAUSED FIRE

426. 05 457 THE NEWER SUSPENDED LOGGING SYSTEMS (HELICOPTER,ETC.) IN MANY CASES PRECLUDE ANY FORM OF SLASH DISPOSAL. ARE THE INCREASED FIRE RISKS BY NOT DOING SLASH DISPOSAL OFFSET BY THE GAINS IN RESOURCE PROTECTION FROM HUMAN DISTURBANCE? FUEL REDUCTION,HUMAN DISTURBANCE,FLAMMABILITY,MANIPULATION COMPARISON

427. 05 457 WHAT EFFECT DOES ACCESS REALLY HAVE ON ACRES BURNED? DOES GOOD ACCESS RESULT IN MAN-CAUSED FIRES AND MORE ACRES BURNED OR DOES IT REDUCE ACRES BURNED BY PROVIDING BETTER SURVEILLANCE AND QUICKER SUPPRESSION ACTION? HUMAN DISTURBANCE,GENERAL FIRE MANAGEMENT,MAN-CAUSED FIRE,AREA SIZE

428. 05 457 WHAT EFFECT WILL INTENSIVE SLASH DISPOSAL (NEARLY COMPLETE PILING AND BURNING) HAVE ON SOIL NUTRIENTS OVER AN EXTENDED PERIOD OF TIME? PRESCRIBED FIRE,FUEL REDUCTION,NUTRIENTS,TIMING

429. 05 458 BY PRESCRIBED BURNING PORTIONS OF SOUTHERN CALIFORNIA CHAPARRAL DRAINAGES, CAN THE 100,000 ACRE FIRES THAT WE NOW FREQUENTLY EXPERIENCE BE REDUCED? WHAT ARE THE ECOLOGICAL DIFFERENCES BETWEEN BURNING REGULARLY BY PRESCRIPTION AND INCURRING PERIODIC DISASTROUS FIRES? FIRE FREQUENCY,FIRE INTENSITY,AREA SIZE,SHRUBLAND,PRESCRIBED FIRE,COMMUNITY,GENERAL FIRE MANAGEMENT,FUEL REDUCTION

430. 05 458 IN THE DOUGLAS-FIR REGION (WESTSIDE CASCADES) WE NEED TO KNOW- WHICH IS BETTER FOR REGENERATION OF DOUGLAS-FIR SEEDLINGS: A) BURNING TO OBTAIN PLANTING SPOTS OR B) NOT BURNING AND SCALPING AFTER MOST SLASH HAS BEEN REMOVED MECHANICALLY? CONIFEROUS FOREST,REPRODUCTION,MANIPULATION COMPARISON,HUMAN DISTURBANCE,PRESCRIBED FIRE,FUEL REDUCTION,PLANTING,POPULATION

431. 05 460 HOW CAN FIRE EFFECTS ON SOIL, AS IT AFFECTS PRODUCTIVITY, BE MEASURED AND BE PREDICTED IN ADVANCE OF FIRE USE? MODEL,FIRE EFFECTS,SOIL,PRODUCTIVITY

432. 05 460 HOW CAN THE ECOLOGICAL EFFECTS OF LOGGING SLASH DISPOSAL BE MEASURED OR ESTIMATED? FUEL REDUCTION,HUMAN DISTURBANCE,MODEL

433. 05 460 WHAT IS THE RATE OF INCREASE IN AVAILABLE FUEL IN A CONIFEROUS FOREST WHERE FIRE IS EXCLUDED? FUEL/BIOMASS ACCUMULATION,CONIFEROUS FOREST

434. 05 462 ARE STANDS OF MIXED PONDEROSA PINE-WHITE FIR DESTINED TO BECOME WHITE FIR CLIMAX? WHAT PART CAN FIRE PLAY? SUCCESSION,FIRE EXCLUSION,FIRE EFFECTS,CONIFEROUS FOREST

435. 05 462 CAN IDAHO FESCUE BE MAINTAINED AS AN UNDERSTORY COMPONENT IN A PONDEROSA PINE STAND WHEN FIRE IS EXCLUDED? FIRE EXCLUSION,HERBAGE UNDERSTORY,CONIFEROUS FOREST

436. 05 463 FIRE PLAYS A VERY IMPORTANT ROLE IN PERPETUATING THE CONIFEROUS FORESTS OF THE COAST RANGE IN OREGON AND WASHINGTON. CLEARCUTTING WITHOUT BURNING FREQUENTLY LEADS TO CONVERSION TO RED ALDER OR OTHER BROAD LEAF SPECIES. CLEARCUTTING FOLLOWED BY BROADCAST BURNING AND PLANTING IS THE STANDARD PRACTICE FOR PERPETUATING CONIFERS. ONE OF THE PROBLEMS IN THIS PROCESS IS THAT DEER AND ELK FREQUENTLY BROWSE THE PLANTED STOCK. IN SOME CASES OUR PLANTATIONS ARE COMPLETELY WIPED OUT, IN OTHERS THE NEW GROWTH IS EATEN ANNUALLY CREATING SHRUBS. THIS SITUATION LASTS FROM 5 TO 7 YEARS FROM MY OBSERVATIONS: THEN THE ANIMALS SEEM TO LEAVE THE PLANTED TREES ALONE AND BROWSE ON OTHER VEGETATION. THIS PROCESS HAS TWO ADVERSE EFFECTS: (1) WE LOSE 5 TO 7 YEARS OF GROWTH DURING A ROTATION AND (2) WE HAVE TO USE ONE OR TWO APPLICATIONS OF HERBICIDES TO CONTROL THE COMPETING BRUSH SPECIES. MY SPECIFIC QUESTION IS: DOES BURNING CHANGE THE NUTRIENT BALANCE THEREBY MAKING CONIFER SPECIES MORE NUTRITIOUS OR MORE PALATABLE DURING CERTAIN SEASONS THAN THE NATIVE BROWSE SPECIES? THIS MAY BE MORE SIMPLY STATED: DOES A RELATIONSHIP EXIST BETWEEN BURNING AND ANIMAL DAMAGE TO CONIFEROUS TREES FOR THE PERIOD FOLLOWING BURNING? NUTRIENTS,HERBIVORY,GAME ANIMAL,PRODUCTIVITY,CONIFEROUS FOREST,SHRUBLAND,PLANTING,FUEL REDUCTION

437. 05 466 WHAT IS THE EFFECT OF VARIOUS FIRE INTENSITIES ON SOIL PRODUCTIVITY AS OBSERVED IN THE PREPARATION OF ORGANIC MATERIAL CONSUMED BY FIRE? CAN REMOVAL OF ALL ORGANIC MATTER PRECLUDE REGENERATION OF VEGETATION? SOIL,VEGETATION,FIRE INTENSITY,DUFF,REPRODUCTION

438. 05 468 IN A THINNING STAND WHERE THE CANOPY IS CLOSED, AT WHAT HEAT INTENSITIES CAN WE EXPECT NEEDLE DAMAGE TO THE TREES? CAN THIS AGAIN BE CORRELATED TO TONS OF SLASH PER ACRE? HOW CAN RATE OF SPREAD BE UTILIZED TO OUR ADVANTAGE? SHOULD IT BE SLOWER OR FASTER? FIRE INTENSITY,CROWN,CROWN BURN,FUEL/BIOMASS ACCUMULATION,HUMAN DISTURBANCE,CONIFEROUS FOREST

439. 05 468 IN THINNING STANDS, WHERE WE ARE REMOVING ABOUT 50% OF THE STEMS (LEAVING 50 TREES PER ACRE) AND THE RESIDUAL STAND AVERAGES 10 TO 16 INCHES DBH, WHAT HEAT INTENSITIES CAN BE STOOD? CAN THIS BE CORRELATED TO "TONS OF SLASH PER ACRE"? WHAT HAPPENS IF THE RESIDUAL

STAND IS 4 TO 6 INCHES DBH? HUMAN DISTURBANCE,PRESCRIBED FIRE,FIRE INTENSITY,HEAT EFFECTS,FIRE EFFECTS,FUEL REDUCTION,STEM,MORTALITY

440. 05 468 IS THERE A SYSTEMATIC METHOD FOR THE FIELD MAN TO RAPIDLY DETERMINE THE SLASH TONNAGE PER ACRE BASED ON THE SPECIES, TYPE OF STAND, NUMBER OF TREES REMOVED AND PERCENT OF TREES UTILIZED? CAN THIS BE EQUATED TO HEAT INTENSITY UNDER A CONTROLLED BURN SITUATION IF SOIL AND FUEL MOISTURE IS KNOWN? FUEL/BIOMASS ACCUMULATION,AREA SIZE,FIRE INTENSITY,SOIL-WATER RELATIONS,PRESCRIBED FIRE

441. 05 468 WHAT HEAT INTENSITIES CAN BE GENERATED BY GROUND FIRE IN A CONTROLLED SITUATION BEFORE WE SUSTAIN BARK DAMAGE AND THE KILLING OF THE TREES? DO WE HAVE TO PULL ALL SLASH AWAY FROM RESIDUAL TREES? FIRE INTENSITY,HEAT EFFECTS,GROUND FIRE,MORTALITY,STEM,FIRE EFFECTS,ORGAN

442. 05 468 WHAT HEAT INTENSITIES CAN BE TOLERATED BY DOUGLAS-FIR BEFORE ROOT DAMAGE IS SUSTAINED? WHAT DEPTH OF SLASH AT WHAT MOISTURE CONTENT WILL CREATE WHAT INTENSITY OF HEAT? WHAT CORRELATION IS THERE TO SOIL TYPE AND SOIL DEPTH AND HEAT DAMAGE TO THE ROOT SYSTEM OF DOUGLAS-FIR? SUGAR PINE? HEAT EFFECTS,FIRE INTENSITY,CONIFEROUS FOREST,ROOTS,ORGAN,FUEL REDUCTION,SOIL,COMMUNITY

443. 05 628 COULD FIRE BE USED ON A MIXED DECIDUOUS - CONIFEROUS WOODLAND IN SUCH A WAY AS TO ENCOURAGE THE DECIDUOUS TREES (E.G. OAK, MAPLE) WHILE SETTING BACK CONIFEROUS INVASION (E.G. DOUGLAS FIR, GRAND FIR)? IF SO, HOW AND WHEN IN THE ANNUAL CYCLE? DECIDUOUS FOREST,CONIFEROUS FOREST,SAVANNA-WOODLAND,COMPETITION,TIMING,PRESCRIBED FIRE,SUCCESSION

444. 05 628 HOW OFTEN WOULD A MANAGED FIRE BE REQUIRED IN A WESTERN OREGON SECOND GROWTH MIXED FOREST TO PROMOTE CONTINUED HIGH WILDLIFE USE? TIMING,FIRE FREQUENCY,WILDLIFE,PRESCRIBED FIRE

445. 05 628 WHAT TYPE OF FIRE BARRIERS CAN BE UTILIZED ON SMALL AREAS TO EFFECTIVELY CONTROL FIRE SPREAD BUT STILL NOT CAUSE EXTENSIVE MECHANICAL DAMAGE TO FRAGILE ECOSYSTEMS? HUMAN DISTURBANCE,GENERAL FIRE MANAGEMENT,AREA SIZE

446. 05 746 AFTER A SEVERE CROWN FIRE WHAT IS THE BEST METHOD TO RE-ESTABLISH A TIMBER STAND FOR CERTAIN SOIL TYPES AND MOISTURE CONDITIONS? PLANT OR SEED? SIZE OF STOCK? METHOD OF PLANTING? USE OF CONTAINERIZED STOCK? PLANT AS SOON AS POSSIBLE OR WAIT A NUMBER OF YEARS BEFORE PLANTING? CROWN BURN,REPRODUCTION,PLANTING,SEED,TIMING,SOIL

447. 05 746 ARE BARK BEETLES ATTRACTED TO FIRE EVEN AFTER A LIGHT PRESCRIBED BURN? FIRE EFFECTS,INSECT,PRESCRIBED FIRE

448. 05 746 WHAT EFFECT DOES THE BURNING OF LOGGING SLASH ON CLEAR CUT AREAS HAVE ON THE SOIL AND STAND RE-ESTABLISHMENT IF THE SLASH IS PILED ALONG WITH HEAVY MATERIAL SUCH AS CULL LOGS? IF THE EFFECTS ARE GREAT, HOW LONG BEFORE THE SOIL RECOVERS? FIRE INTENSITY,FUEL REDUCTION,HUMAN DISTURBANCE,SOIL,REPRODUCTION

449. 05 746 WHAT EFFECT DOES THE SEEDING OF GRASSES ON A FIRE AREA HAVE ON PLANTED TREES? DOES IT INCREASE OR DECREASE THE CHANCE OF SURVIVAL OF THE PLANTED TREES? IF GRASS IS SEEDED, SHOULD THIS BE DONE JUST PRIOR TO PLANTING TREES, OR ONE OR TWO YEARS EARLIER? TIMING,HERBAGE UNDERSTORY,PLANTING,FIRE EFFECTS,REPRODUCTION,COMPETITION

450. 05 746 WHAT IS THE INCIDENCE OF SEEDLINGS WHERE SLASH PILES HAVE BEEN BURNED IN PARTIAL CUT AREAS? REPRODUCTION,ASH,CHARCOAL,NUTRIENTS,FUEL REDUCTION,HUMAN DISTURBANCE

451. 05 831 THERE IS A NEED FOR DEVELOPING MODELS TO SHOW ACRES SAVED FROM BURNING AND ASSOCIATED BRUSH CONTROL WITH VARIOUS LEVELS OF PROTECTION. THE COST PLUS LOSS APPROACH DOESN'T GIVE INSIGHT TO WHAT IS AN ADEQUATE LEVEL OF PROTECTION UNDER A GIVEN SET OF CIRCUMSTANCES. GENERAL FIRE MANAGEMENT

452. 05 831 THERE IS A NEED FOR MORE EMPHASIS ON FUELS MANAGEMENT: PARTICULARLY IN REGARDS TO DETERMINING NEEDS AND METHODS FOR FUEL REDUCTION, THE ASSOCIATED BENEFIT/COST AND FISCAL RESPONSIBILITIES (PUBLIC OR LANDOWNER). GENERAL FIRE MANAGEMENT

453. 06 171 IN THE BLACK HILLS, SOUTH DAKOTA, PONDEROSA PINE OFTEN GROWS IN VERY DENSE "DOG HAIR" STANDS. THESE STANDS APPEAR TO BE MOST COMMON ON SOILS DERIVED FROM METAMORPHOSED PRECAMBRIAN QUARTZ-MICA SCHISTS. THERE IS GOOD EVIDENCE THAT THE PONDEROSA PINE FORESTS OF THE BLACK HILLS HAVE A LONG HISTORY OF FIRES. MY QUESTION IS TWO-PARTED: ARE THE DENSE "DOG HAIR" PONDEROSA PINE STANDS DIRECTLY RELATED TO THE FIRE HISTORY OF THE SITE? IF SO, WHAT IS THE INTERACTION OF THE GEOLOGY-SOIL FACTOR AND FIRE WHICH TENDS TO PRODUCE "DOG HAIR" STANDS ON SOME SITES AND NOT ON OTHERS? FUEL/BIOMASS ACCUMULATION,DENSITY,FIRE FREQUENCY,SOIL

454. 06 250 WHAT IS THE EFFECT OF DIFFERENT DENSITIES OF ELK POPULATIONS ON REPRODUCTION OF ASPEN (1) WITH FIRE EXCLUSION, AND (2) WITH FIRES OF VARIOUS FREQUENCIES AND INTENSITIES? FIRE EXCLUSION,FIRE FREQUENCY,FIRE INTENSITY,REPRODUCTION,DECIDUOUS FOREST,GAME ANIMAL,POPULATION,DENSITY,REPRODUCTION,HERBIVORY

455. 06 297 HOW MANY OF THE UNDERSTORY SPECIES ARE ACTUALLY KILLED BY THE FIRE, OR WHAT ROLE DOES ROOT SPROUTING PLAY IN REVEGETATION OF BURNED AREAS? HERBAGE UNDERSTORY,SHRUB UNDERSTORY,MORTALITY,ROOTS,REPRODUCTION

456. 06 297 WHAT CHANGES IN AVAILABLE FORAGE OCCUR IN A BURN, AND WHAT FACTORS INFLUENCE THE UTILIZATION OF THESE FOOD SOURCES? HERBIVORY

457. 06 297 WHAT FACTORS ARE IMPORTANT TO LODGEPOLE PINE REGENERATION, AND WHAT, BESIDES FIRE INTENSITY, AFFECTS REPRODUCTION DENSITY FOLLOWING FIRE? REPRODUCTION,FIRE INTENSITY,VEGETATION

458. 06 297 WHAT IS THE FATE OF MINERALS RELEASED BY THE FIRE? NUTRIENTS

459. 06 297 WHAT PARAMETERS AFFECT NATURAL FUEL ACCUMULATION AND DEGRADATION, AND HOW DO THESE PARAMETERS VARY IN THE DIFFERENT COMMUNITY TYPES OR HABITAT TYPES? FUEL/BIOMASS ACCUMULATION,MORTALITY,DECOMPOSITION

460. 06 298 CAN WE EXPECT SUCCESSFUL REGENERATION OF ASPEN AND OTHER SHRUB SPECIES FOLLOWING FIRE ON A RANGE THAT RECIEVES A HEAVY LEVEL OF UNGULATE BROWSING? HOW MANY ACRES NEED BE BURNED, AND UNDER WHAT CONDITIONS, IF ONE IS TO EXPECT SUCCESSFUL REGENERATION? IT SEEMS TIMELY TO INVESTIGATE THIS RELATIONSHIP IN OTHER REGIONS OF THE WEST WHERE UNGULATE BROWSING HAS BEEN ATTRIBUTED TO THE DEMISE OF ASPEN. GAME ANIMAL,DECIDUOUS FOREST,HERBIVORY,AREA SIZE,REPRODUCTION,SUCCESSION,SHRUBLAND

461. 06 298 IT IS EVIDENT THAT SUBALPINE FIR HAS BEEN HIGHLY IMPORTANT IN THE DIET OF WINTERING MOOSE OVER THE PAST SEVERAL DECADES. EXTENDED OBSERVATION OVER SEVERAL YEARS INDICATES THAT THE AVAILABILITY OF SUBALPINE FIR IS ON THE DECLINE OWING TO ACCUMULATIVE HEAVY UTILIZATION AND UNAVAILABILITY OWING TO GROWTH. WE NEED RESEARCH DATA ON WHAT VEGETATIVE TYPES, UNDER WHAT CONDITIONS, AND IN WHAT TIME PERIOD WE MIGHT EXPECT TO GET SUBALPINE FIR FOLLOWING BURNING. WHAT IS THE TIME LAG OF SUBALPINE FIR REGENERATION IN A LODGEPOLE PINE STAND FOLLOWING BURNING COMPARED WITH FOLLOWING CLEARCUTTING? SUCCESSION,GAME ANIMAL,HERBIVORY

462. 06 298 WHAT IS THE MONETARY LOSS DUE TO WILDFIRE IN A SAGEBRUSH-ASPEN OR ASPEN-CONIFER ASSOCIATION? (WE HEAR SOME WILD FIGURES THROWN AROUND. IT APPEARS TIMELY THAT A COMPARISON OF SUPPRESSION COSTS BE MADE WITH ACTUAL DAMAGE. A CALCULATION OF WILDLIFE BENEFITS, IN DOLLARS, IN THESE TYPES MIGHT SERVE TO PUT US ON A COURSE OF FIRE MANAGEMENT INSTEAD OF THE PRESENT HEAD-IN-THE-SAND APPROACH OF TOTAL SUPPRESSION.) FIRE EXCLUSION,ECONOMIC EFFECTS,GENERAL FIRE MANAGEMENT

463. 06 298 WHAT IS THE SUCCESSIONAL SEQUENCE OF DECIDUOUS SPECIES SUCH AS MOUNTAIN ASH, SCOULER WILLOW, BOG BIRCH, RUSSET BUFFALO BERRY, BEARBERRY HONEY SUCKLE, AND OTHER SHRUBS WHICH ARE UTILIZED WHEN AVAILABLE BY WINTERING MOOSE? WHAT TAKES PLACE WHEN AN AREA CONTAINING ONLY REMNANTS OF THESE SPECIES BURNS OVER? DOES IT TAKE SEVERAL YEARS OR SEVERAL DECADES FOR THESE SPECIES TO FILL IN AND BECOME REESTABLISHED? OR, ARE SOME PLANT

ASSOCIATIONS SO FAR GONE THAT THEY STAND NO CHANCE OF BEING REJUVINATED BY FIRE? - (IT APPEARS WE NEED SOME PRESCRIBED BURNS AND INTENSIVE SAMPLING TO DETERMINE THESE RELATIONSHIPS. IT IS EVIDENT WE NEED INFORMATION OF THIS NATURE IN ORDER TO DETERMINE WHETHER CERTAIN SUBALPINE FIR TYPES, NOW SUPPORTING WINTERING MOOSE, COULD LIKEWISE SUPPORT MOOSE IN EARLY STAGES OF SUCCESSION. IT IS RATHER CLEAR THAT MOST WILDLIFE SPECIES ARE BENEFITED BY FIRE AND DO WELL IN EARLY STAGES OF SUCCESSION; HOWEVER, IT IS NOT SO EVIDENT WITH RESPECT TO MOOSE.) SUCCESSION,GAME ANIMAL,SHRUBLAND,HERBIVORY,REPRODUCTION

464. 06 299 DETERMINE THE PREHISTORIC (I.E. PRE EURO AMERICAN MAN) FREQUENCY OF FIRE IN VARIOUS CONIFEROUS FOREST TYPES - I.E., FREQ.,SIZE, INTENSITY USING ANALYSIS OF FIRE SCARS -INFERENCES FROM EARLY PHOTOS, ETC. EXPERIMENT ORIENTED QUESTION

465. 06 300 HOW DO THE BIOLOGICAL AND CHEMICAL EFFECTS OF PRESENTLY USED LOGGING PRACTICES IN VARIOUS FOREST TYPES COMPARE TO THE BIOLOGICAL AND CHEMICAL EFFECTS OF PAST WILD FIRES IN THESE FOREST TYPES? CAN LOGGING TECHNIQUES BE MODIFIED SO THAT THESE EFFECTS ARE QUITE SIMILAR? MANIPULATION COMPARISON

466. 06 300 HOW DOES FIRE SUPPRESSION, WHICH RESULTS IN INCREASES IN SHRUB AND FOREST COVER, AFFECT THE HYDROLOGIC CYCLE IN SPECIFIC ECOSYSTEM TYPES? DOES DECREASED STREAM FLOW OR LOWERING OF THE WATER TABLE COMMONLY RESULT? FIRE EXCLUSION,HYDROLOGY

467. 06 300 THE PROCESSES OF DECOMPOSITION FOLLOWING FIRE, AND IN THE ABSENCE OF FIRE, NEED QUALITATIVE AND QUANTITATIVE STUDY. HOW DO ORGANISMS INVOLVED DIFFER? DECOMPOSITION,MICROORGANISM

468. 06 300 QUANTITATIVE DOCUMENTATION IS NEEDED FOR FUEL BUILDUP OR REDUCTION OVER TIME IN VARIOUS ECOSYSTEM TYPES. SOME RESOLUTION IS NEEDED BETWEEN THE CONCEPTS THAT "FIRE BREEDS MORE FIRE" AND THAT "AFTER LONG ENOUGH FIRE SUPPRESSION, FIRE BECOMES INEVITABLE." FUEL/BIOMASS ACCUMULATION,EXPERIMENT ORIENTED QUESTION

469. 06 471 CAN WE PREDICT ELAPSED TIME WHEN NATURAL REGENERATION WILL FOLLOW NATURAL OR MAN-CAUSED FIRES? ALSO, IF NATURAL REGENERATION DOES NOT FOLLOW FIRE, IS THIS DUE TO A NUTRIENT OR SOIL LIMITATION WHICH WOULD DISCOURAGE SEEDING OR PLANTING? IF SO, FOR HOW LONG A TIME IS THIS DEFICIENCY A SIGNIFICANT FACTOR? REPRODUCTION,FIRE EFFECTS,PLANTING,SOIL,NUTRIENTS

470. 06 471 WHAT EFFECT DOES SLASH LEFT ON THE GROUND (AS COMPARED TO DUE TO BURNING) HAVE ON MOISTURE RETENTION CAPABILITIES OF THE SOIL? ALSO,WHAT RELATION IS THERE TO THE EFFECTS OF SNOW ACCUMULATION AND/OR RETENTION AND POTENTIAL SOIL MOISTURE CONTENT? FUEL REDUCTION,HUMAN DISTURBANCE,MANIPULATION COMPARISON,SNOW,SOIL-WATER RELATIONS,FIRE EFFECTS

471. 06 474 WHAT EFFECTS DO ASHES HAVE ON STREAMS IN RELATION TO AQUATIC LIFE FROM LODGEPOLE SITES? SPRUCE-FIR SITES? WHAT CONCENTRATIONS OF ASH ARE HARMFUL? SHOULD CATCH BASINS BE USED TO KEEP ASH OUT OF STREAMS? ASH,STREAM,FIRE EFFECTS,CONIFEROUS FOREST

472. 06 478 IS ORGANIC FERTILIZATION PRACTICAL IN SITUATIONS WHERE HOT FIRES HAVE DESTROYED SOIL NUTRIENTS? SOIL,NUTRIENTS,HEAT EFFECTS,FIRE EFFECTS,HUMAN DISTURBANCE

473. 06 666 WHAT ARE THE EFFECTS (PHYSICAL) OF FIRE ON SMALL COLD WATER DRAINAGES WITH REFERENCE TO SILT, TEMPERATURE CHANGES IN STREAM PHYSIOGNOMY AND DURATION OF IMPACT? WHAT ARE THE EFFECTS (BIOLOGICAL) ON AQUATIC FAUNA, TROUT SPAWNING AREAS AND DURATION OF IMPACT? STREAM,FIRE EFFECTS,SOIL EROSION,TIMING,FISH,ANIMALS,ECOSYSTEM

474. 06 667 IS THE SAVANNA OF THE HUDSONIAN ZONE IN NORTHWEST WYOMING THE RESULT OF PERIODIC WILDFIRE? IF SO, WHAT WILL BE THE LONG-TERM EFFECT ON THIS REGION IF FIRES ARE CONTROLLED BY MAN? GRASSLAND,FIRE EFFECTS,FIRE HISTORY,FIRE EXCLUSION,ECOSYSTEM

475. 06 667 WOULD IT BE POSSIBLE TO COMPILE AND PUBLISH INTO ONE COMPREHENSIVE REPORT THE MANY ASPECTS OF FIRE AND ITS EFFECT ON BROWSE? INCLUDED SHOULD BE RECOMMENDATIONS FOR MANAGEMENT. FIRE EFFECTS,SHRUBLAND,WILDLIFE,GAME ANIMAL,GENERAL FIRE MANAGEMENT

476. 06 668 WHAT CHEMICAL CONSTITUENTS CAN BE EXPECTED IN RUNOFF FROM BURNED OVER FOREST LANDS? WHAT CHANGES IN SURFACE WATER QUANTITY AND QUALITY CAN BE EXPECTED FROM A BURNED OVER DRAINAGE AREA? STREAM,FIRE EFFECTS,SOIL-WATER RELATIONS

477. 06 668 WHAT EFFECTS DO FIRE ROAD AND FIRE LINE CONSTRUCTION HAVE ON SILT DEPOSITION IN STREAMS WITHIN AND BELOW THE FIRE AREA? HUMAN DISTURBANCE,STREAM,SOIL EROSION

478. 06 670 FROM A STANDPOINT OF STREAM MORPHOLOGY AND RESIDENT TROUT POPULATIONS, WHAT ARE THE ADVANTAGES (IF ANY) AND DISADVANTAGES OF FIRE? STREAM,FISH,FIRE EFFECTS

479. 06 671 DOES FIRE STERILIZE THE SOIL THUS REDUCING THE NUTRIENTS ENTERING A STREAM AND THUS REDUCING THE PRODUCTIVITY OF THE STREAM? HOW LONG A PERIOD IS REQUIRED FOR THE SOIL TO RETURN TO ITS ORIGINAL COMPOSITION? STREAM,NUTRIENTS,PRODUCTIVITY,SOIL,HEAT EFFECTS

480. 06 671 IN FIRE SUPRESSION ACTIVITIES, WHAT EFFECT DOES SLURRY HAVE UPON THE WATER CHEMISTRY OF THE STREAM AND THE ORGANISMS LIVING IN THE WATERS? CHEMICAL RETARDANT EFFECTS,STREAM

481. 06 723 DOES THE SUPPRESSION OF FIRE HISTORICALLY HAVE A VALUABLE COST BENEFIT RATIO IF TIMBER PRODUCTION AND COSTS OF SUPPRESSION ALONE ARE CONSIDERED? ECONOMIC EFFECTS,GENERAL FIRE MANAGEMENT

482. 06 723 IN THE ROCKY MOUNTAIN AREA, IN WHAT SEASON WOULD A FIRE HAVE MOST BENEFICIAL VALUE TO ELK AND MULE DEER HABITAT IN A) SPRUCE COMMUNITIES? B)PONDEROSA COMMUNITIES? C)SAGE BRUSH-JUNIPER COMMUNITIES? GAME ANIMAL,FIRE EFFECTS,TIMING,COMMUNITY

483. 06 723 IS THE CHAINING (UP-ROOTING AND KILLING) OF PINON-JUNIPER GROSSLY SIMILAR IN ITS EFFECTS ON MULE DEER AND OTHER WILDLIFE HABITAT TO FIRE-BURNED AREAS OF SIMILAR SIZE AND SHAPE? MANIPULATION COMPARISON,WILDLIFE,GAME ANIMAL,AREA SIZE

484. 06 724 DOES FIRE(NATURAL OR SLASH BURNING) HAVE ANY MEASURABLE EFFECT ON THE LEVELS OF HEART ROT AND/OR BUTT ROT FOUND IN SUCCESSOR STANDS? DISEASE,SUCCESSION,STEM,FIRE EFFECTS

485. 06 724 WHAT ARE THE EFFECTS OF EXCLUDING FIRE FROM LODGEPOLE-ASPEN ASSOCIATIONS WHEN MUCH OF THE LODGEPOLE HAS BEEN KILLED BY BEETLES, OR MUCH OF THE ASPEN HAS BEEN KILLED BY ELK? WHAT WOULD BE THE EFFECTS OF BURNING ON COMPOSITION AND TIME OF ESTABLISHMENT OF SUCCESSOR STANDS? SUCCESSION,DECIDUOUS FOREST,CONIFEROUS FOREST,INSECT,FUEL/BIOMASS ACCUMULATION,GAME ANIMAL,FIRE EXCLUSION

486. 06 724 WHAT ARE THE EFFECTS OF FIRE AND FIRE EXCLUSION IN ASSOCIATED ASPEN AND LODGEPOLE STANDS ON THE POPULATION GROWTH OF RUFFED GROUSE? BIRD,FIRE EXCLUSION,FIRE EFFECTS,DECIDUOUS FOREST,CONIFEROUS FOREST

487. 06 724 WHAT ARE THE SHORT AND LONG TERM EFFECTS OF FIRE ON WATER QUALITY IN SMALL STREAMS? SEDIMENT, CHEMICAL COMPONENTS, AND WATER TEMPERATURES ARE OF INTEREST PARTICULARLY AS THEY RELATE TO TROUT HABITAT AND SPAWNING AREAS. HOW LONG WOULD THE SEVERAL EFFECTS LAST? STREAM,FIRE EFFECTS,NUTRIENTS,FISH

488. 07 094 GIVEN COMPLETE AND CONTINUOUSLY SUCCESSFUL PROTECTION FROM FIRE IN SEQUOIA GROVES, WHAT EVENTUAL PLANT COMMUNITY COMPOSITION WOULD DERIVE? IN SUCH CIRCUMSTANCES, AND BARRING OTHER CATASTROPHIC EVENTS, WHAT LENGTH OF LIFE MIGHT ACCRUE TO THE GIANT SEQUOIA? FIRE EXCLUSION,VEGETATION,SPECIES DIVERSITY,SUCCESSION,COMPETITION,AGE

489. 07 094 IN A PROGRAM OF REGULAR PRESCRIPTION BURNING AIMED AT FIRE HAZARD REDUCTION, WILL THE BOUNDARIES OF INDIVIDUAL GROVES CHANGE AS A RESULT? IN OTHER WORDS, WHAT HAS BEEN THE ROLE OF FIRE (IF ANY) IN DELIMITING THE PRESENT RATHER ISOLATED SEQUOIA GROVES? PRESCRIBED FIRE,FUEL/BIOMASS ACCUMULATION,ECOTONE,AREA SIZE

490. 07 094 WHAT IS THE RELATIONSHIP OF SOIL TEMPERATURE DIFFERENCES RESULTING FROM WILD AND/OR PRESCRIPTION

FIRES AND THE SUCCESS OR LACK THEREOF OF SEQUOIA REGENERATION? HOW DO OTHER ASSOCIATE PLANTS RESPOND TO THIS HEAT DIFFERENTIAL? FIRE INTENSITY,MANIPULATION COMPARISON,MICROCLIMATE,REPRODUCTION,COMPETITION

491. 07 095 HOW DOES WATER-YIELD CHANGE FOLLOWING WILDFIRE (AND CONTROLLED BURNS, INCLUDING SLASH DISPOSAL)? (AMOUNT, TIMING, AND DURATION.) HYDROLOGY

492. 07 097 IF NATURAL FIRE FREQUENCIES COULD BE ALLOWED IN SOME AREAS OF SOUTHERN CALIFORNIA CHAPARRAL BORDERING ON PINE FOREST, WHAT WOULD BE THE RESPONSE OF THE ADJACENT PINE FOREST IN TERMS OF FIRE FREQUENCY AND FUEL COMSUMPTION? ZONATION,FIRE FREQUENCY,FIRE BEHAVIOR,FUEL/BIOMASS ACCUMULATION,FIRE EXCLUSION,FUEL REDUCTION

493. 07 174 WHAT EFFECT DO DIFFERENT FIRE SUPPRESSION ACTIVITIES HAVE ON FIRE INTENSITY? DOES THE LENGTH OF TIME BETWEEN FIRE LEAD TO MORE INTENSE FIRES? PERIPHERAL TO THIS ARE THE FOLLOWING QUESTIONS. WHAT IS THE RELATIONSHIP BETWEEN FIRE INTENSITY (HEAT FLUX) AND: (1) THE AMOUNT OF LITTER AND VEGETATION DESTROYED DURING FIRE: (2) THE AMOUNT OF NITRATE, AMMONIUM, AND TOTAL NITROGEN REMAINING AFTER A FIRE AND (3) THE PRODUCTION OF A WATER REPELLENT SOIL CONDITION? FIRE EXCLUSION,FUEL/BIOMASS ACCUMULATION,FIRE INTENSITY,FIRE BEHAVIOR,FUEL REDUCTION,NUTRIENTS,SOIL-WATER RELATIONS

494. 07 176 I BELIEVE THAT IT WOULD BE WORTH-WHILE TO INVESTIGATE THE IMPORTANCE OF DRY RAVEL MOVEMENT AFTER FIRE ON SLOPES WITH RESPECT TO THE LOSSES OF NUTRIENTS FROM BURNED SLOPES AND ITS EFFECT ON SEED GERMINATION. THE LATTER EFFECTS COULD INCLUDE CARRYING SEED FROM THE STEEP SITES, COVERING SEED AND PROTECTING IT FROM RODENTS, OR PERHAPS BURYING IT TOO DEEPLY FOR GERMINATION AND ESTABLISHMENT. SOIL EROSION,TOPOGRAPHY,NUTRIENTS,SEED,REPRODUCTION,HERBIVORY

495. 07 252 CAN THE ALTERATION OF THE VEGETATION, IN TERMS OF HORIZONTAL AND VERTICAL DIVERSITY, BE USED TO PREDICT REACTIONS BY ANIMAL POPULATIONS IN TERMS OF SPECIES OCCURRENCE, DISTRIBUTION, AND DENSITY? VEGETATION,ANIMALS,SPECIES DIVERSITY,POPULATION

496. 07 252 WHAT IS THE OPTIMUM (OR DESIRABLE) SIZE AND/OR SHAPE OF A BURN THAT WOULD RESULT IN A MORE DIVERSE ANIMAL COMPOSITION THAT INCLUDES THE CLIMAX COMMUNITY SPECIES? MOSAIC,AREA SIZE,SPECIES DIVERSITY,ANIMALS

497. 07 253 ARE MAN'S METHODS AND TIMBER HARVEST MORE HARMFUL IN WATERSHED ECOLOGY, STREAM BIOLOGY AND STREAM MECHANICS THAN WOULD BE THE EFFECTS OF NATURAL FIRES IN THE SAME WATERSHED? MANIPULATION COMPARISON,STREAM,WATERSHED

498. 07 257 HOW CAN PRESCRIBED BURNING BE USED TO MAXIMIZE BROWSE AND HERBACEOUS VEGETATION PRODUCTION IN THE UNDERSTORY? PRESCRIBED FIRE,SHRUB UNDERSTORY,PRODUCTIVITY

499. 07 257 HOW DOES FIRE AFFECT THE NUTRITIONAL VALUES OF SEEDS ON THE SURFACE OF THE SOIL? NUTRIENTS,SEED

500. 07 257 HOW DOES PRESCRIBED BURNING, FOR CONTROL OF LODGEPOLE PINE, AFFECT ADJACENT MEADOWS? MOSAIC

501. 07 257 HOW DOES THE BURNED ENVIRONMENT AFFECT THE BEHAVIOR OF RODENTS (FOOD HUNTING AND MOVEMENT PATTERNS, COMPETITION)? ARE RODENTS MORE SUSCEPTIBLE TO PREDATION AFTER A FIRE? HOW DO SMALL MAMMAL REPRODUCTIVE PATTERNS RESPOND TO HABITAT CHANGES RESULTING FROM FIRE? ANIMAL BEHAVIOR,SMALL MAMMAL,EXPERIMENT ORIENTED QUESTION,PREDATION,REPRODUCTION

502. 07 257 WHAT ARE THE UNDERSTORY SUCCESSIONAL PATTERNS, IN RELATION TO DEER HABITAT, AFTER BURNING IN TRUE FIR, PINE, AND LODGEPOLE TYPES? SHRUB UNDERSTORY,SUCCESSION,SPECIES DIVERSITY

503. 07 302 HOW DO FUEL LOADS CHANGE WITH TIME IN MAJOR FOREST TYPES? FUEL/BIOMASS ACCUMULATION

504. 07 302 WHAT IS THE FUEL SITUATION ON A SITE RECENTLY PRESCRIBED BURNED--INVOLVING HOW MUCH DEAD AND LIVING FUELS ARE LEFT ON THE GROUND, IN THE UNDERSTORY, AND IN THE CROWN? FUEL/BIOMASS ACCUMULATION

505. 07 483 WHAT IS THE EFFECT OF REPEATED PRESCRIBED GROUND FIRES (EVERY 5 TO 8 YEARS), ON SHADED FUEL BREAKS, AS SEEN IN CONCENTRATIONS OF AVAILABLE SOIL NUTRIENTS? CAN THE FREQUENCY AND TIMING OF SUCH BURNING BE DONE SO AS TO PERPETUATE AN ARRESTED GRASS ECOSYSTEM? IF GRADUAL DEPLETION OF NECESSARY SOIL NUTRIENTS OCCURS, CAN THIS BE OFFSET BY PURPOSELY FERTILIZING THE FUEL BREAKS? PRESCRIBED FIRE,GROUND FIRE,NUTRIENTS,FIRE FREQUENCY,TIMING,SUCCESSION

506. 07 491 A NEED FOR DATA WHICH MIGHT INDICATE APPROXIMATELY HOW OFTEN NATURAL FIRE OCCURRED IN VARIOUS VEGETATIVE TYPES PRIOR TO MAN'S INTERVENTION. FIRE FREQUENCY

507. 07 491 WHAT EFFECTS WILL HOT SLASH BURNING HAVE ON SOILS AND REGENERATION? REPEATED BURNINGS? FIRE INTENSITY,SOIL,REPRODUCTION

508. 07 495 IS THERE REALLY A FUEL BUILD-UP DUE TO EFFECTIVE SUPPRESSION THAT EXCEEDS THAT WHICH OCCURRED NATURALLY? THERE MAY BE AN INCREASE IN TOTAL BIOMASS, BUT DOES THE ACCUMULATION CONSIST OF FINE FUELS THAT CONTRIBUTE TO FIRE INTENSITY, OR DOES THE ACCUMULATION CONSIST OF TREE BOLES AND DOWN LOGS, WHICH ACTUALLY CONTRIBUTE VERY LITTLE TO THE MOVING FLAME FRONT? FUEL/BIOMASS ACCUMULATION,FIRE EXCLUSION,FIRE BEHAVIOR

509. 07 495 WHAT ARE THE SUCCESSIONAL TRENDS IN THE AREA AND HOW ARE THEY INTERRUPTED BY FIRE AT VARIOUS STAGES? SUCCESSION

510. 07 495 WHAT EFFECTS CAN BE EXPECTED FROM EXCEEDING THE NATURAL PERIODICITY, SUCH AS WE ARE PROBABLY DOING IN AREAS OF HIGH MAN-CAUSED FIRES? WHAT REBURN FREQUENCY IS NECESSARY TO CAUSE A CONIFER STAND TO REVERT TO BRUSH FIELDS IN THIS AREA? FIRE FREQUENCY,SUCCESSION,SHRUBLAND

511. 07 495 WHAT WAS THE AVERAGE FIRE PERIODICITY PRIOR TO SUPPRESSION? WHAT WAS THE NATURE OF FIRE PRIOR TO SUPPRESSION, E.G. WERE THEY LOW INTENSITY SURFACE FIRES OR HIGH INTENSITY CROWN FIRES? ASSUMING FIRES OF BOTH TYPES OCCURRED, WHICH TYPE FIRE PLAYED THE DOMINANT ROLE IN SHAPING THE FOREST BIOME? FIRE FREQUENCY

512. 07 502 WHAT EFFECTS DOES FIRE HAVE ON ARCHEOLOGICAL ARTIFACTS LYING ON THE GROUND SURFACE OR IMMEDIATELY BELOW IT IN REGARDS TO THEIR FUTURE CARBON 14 DATING? HUMAN ECOLOGY

513. 07 504 HOW CAN FUELS BE ACCURATELY DESCRIBED IN ORDER TO RELATE THEM TO HAZARD RATINGS, SO THAT THEY CAN READILY BE RECOGNIZED BY PEOPLE WITH LIMITED EXPERIENCE? FUEL/BIOMASS ACCUMULATION,EXPERIMENT ORIENTED QUESTION

514. 07 507 HOW CAN WE ESTIMATE FIRE BEHAVIOR FOR VARIOUS FUEL TYPES, AND THE CHANGES CAUSED BY ADDING LOGGING SLASH AND THINNING SLASH? FIRE BEHAVIOR,FUEL/BIOMASS ACCUMULATION

515. 07 507 HOW MUCH ASH CAN WE HAVE AND STILL GROW TREES? CAN WE PLANT IN SLASH PILES? ASH,PRODUCTIVITY

516. 07 507 WHAT ARE THE REASONS UNBURNED ISLANDS ARE LEFT WHEN SLOPE, WINDS, FUELS, ETC. ALL INDICATE THE WHOLE SLOPE SHOULD BURN CLEANLY? FIRE BEHAVIOR,FUEL REDUCTION

517. 07 604 WILL THE CARBON CREATED BY BURNING TIE UP CERTAIN HERBICIDES THAT MIGHT BE USED TO CONTROL THE EMERGENCE OF GRASS OR BRUSH SPECIES? NUTRIENTS,PLANTING,COMPETITION

518. 07 674 WHAT IS THE SUCCESSIONAL PATTERN AND TIME OF REGROWTH AFTER COMPLETE OR PARTIAL REMOVAL OF OVERSTORY AND/OR UNDERSTORY, A) BY FIRE, B) BY MECHANICAL MEANS? SUCCESSION,MANIPULATION COMPARISON,CONIFEROUS FOREST,SHRUB UNDERSTORY,HERBAGE UNDERSTORY,REPRODUCTION

519. 07 725 THE EXCLUSION OF GROUND FIRES WITHIN THE NORTHERN CALIFORNIA DISTRICT HAS BROUGHT ABOUT A FOUR SIDED PROBLEM: A) ALLOWED DENSE STANDS OF HARDWOOD BRUSH AND UNDESIRABLE "WEED" TREES TO DEVELOP UNDER THE OLD GROWTH DOUGLAS-FIR TREES. THIS HAS EFFECTIVELY ELIMINATED THE ESTABLISHMENT OF CONIFER REPRODUCTION IN MANY AREAS. B) ALLOWED BRUSH AND WEED TREES TO GROW OUT OF THE REACH OF THE BLACK TAILED DEER RESULTING IN FEWER DEER, DUE TO LACK OF BROWSE. C) RESULTED IN AN IMPENETRABLE WALL OF VEGETATION, PREVENTING ACCESS TO BOTH MAN AND LARGE GAME ANIMALS. D) THIS RESULTING HEAVY STAND OF UNDERBRUSH INCREASES THE DANGER OF AN INTENSE BURN WHICH WILL

DESTROY THE SITE-BOTH VEGETATION AND SOIL. IF PRESCRIBED GROUND FIRE IS ONE POSSIBLE TREATMENT FOR THESE CONDITIONS, WHAT MIGHT BE THE EFFECT OF VARIOUS SEASONS (SOIL AND FUEL MOISTURE) OF BURNING, AND FREQUENCY OF PRESCRIBED GROUND FIRES, AS SEEN IN CONIFER REPRODUCTIVE SUCCESS, DEER POPULATION DENSITY, GAME ANIMAL ACCESS, AND REMAINING FUEL QUANTITY? FIRE EXCLUSION,FIRE FREQUENCY,TIMING,REPRODUCTION,GAME ANIMAL,FUEL/BIOMASS ACCUMULATION,PRESCRIBED FIRE

520. 07 747 WHAT IS THE AVERAGE TIME THAT A FIRE KILLED SNAG WILL STAND BEFORE NATURE TAKES ITS COURSE AND IT FALLS DOWN BY ITSELF? (BASED ON DIAMETERS, OF COURSE) SNAG,AGE,SIZE CLASS,DECOMPOSITION

521. 07 747 WHAT IS THE EFFECT OF FIRE INTENSITY ON FUTURE CONE PRODUCTION? DOES AN INCREASE IN SEED PRODUCTION RESULT ON SURVIVING TREES? SEED,FIRE INTENSITY

522. 07 747 WHAT IS THE EFFECT OF FIRES OF VARIOUS INTENSITIES, AND AT DIFFERENT TIMES OF THE YEAR, ON THE SEEDS OF ANNUAL GRASSES AND OTHER ANNUALS? FIRE INTENSITY,TIMING,SEED,GRASSLAND

523. 07 748 ASSUME NO RAIN FROM MAY TO SEPTEMBER, IN STEEP MOUNTAINOUS TERRAIN: WHAT MIGHT BE THE COMPARATIVE EFFECTS BETWEEN (1) CRUSHING SLASH INTO CUTOVER SLOPES, VS. (2) PILING AND BURNING SLASH, WITH REGARD TO SEEDLING GROWTH AND PRODUCTION? WOULD SOIL EROSION DIFFER WITH THESE CONTRASTING TREATMENTS? MANIPULATION COMPARISON,REPRODUCTION,VEGETATION,SOIL EROSION

524. 07 748 ASSUME NO RAIN FROM MAY TO SEPTEMBER, IN STEEP MOUNTAINOUS TERRAIN: WHAT MIGHT BE THE EFFECT OF VARIOUS DEGREES OF LOGGING SLASH REDUCTION BY BURNING, ON THE WIND DESSICATION OF SUBSEQUENT SEEDLINGS AND THE SUPPLY OF LIGHT, NUTRIENTS, MOISTURE AND HEAT TO THE SEEDLINGS? HOW WOULD THIS VARY WITH SLOPE? FUEL REDUCTION,MICROCLIMATE,REPRODUCTION,NUTRIENTS,TOPOGRAPHY ,VEGETATION

525. 07 749 WHAT EFFECT DO REPEATED FIRES HAVE ON THE REGENERATION OF POISON OAK IN THE SIERRA NEVADA FOOTHILLS? WHAT IS THE PALATABILITY OF POISON OAK COMPARED TO ASSOCIATED SPECIES? FIRE FREQUENCY,HERBAGE UNDERSTORY,REPRODUCTION,ORGANISM,HERBIVORY,DOMESTIC LIVESTOCK

526. 07 749 WHEN IS THE MOST OPPORTUNE TIME TO REMOVE BRUSH GROUND COVER FOR A FUEL BREAK SO THAT REGENERATION IS MINIMIZED, DURING EARLY SPRING BEFORE INITIAL GROWTH STARTS, OR LATE FALL AFTER GROWTH HAS TERMINATED FOR THE SEASON? GENERAL FIRE MANAGEMENT,SHRUBLAND,REPRODUCTION,COMMUNITY,TIMING

527. 07 750 WHAT IS THE DIFFERENCE IN THE EFFECT OF SPRING FIRES AND FALL FIRES AS FAR AS DAMAGE TO SAPLING, POLE AND LARGER STANDS? IS THERE A DIFFERENCE BETWEEN REACTION OF CONIFERS AND HARDWOODS? TIMING,HEAT EFFECTS,MORTALITY,SIZE CLASS

528. 07 750 WHAT IS THE EFFECT OF REPEATED (EVERY TWO YEARS) GROUND FIRES THRU HAZEL BRUSH UNDERSTORY, IN MIXED HARDWOOD DOUGLAS-FIR STANDS? WILL HAZEL CONTINUE TO SURVIVE, AND WILL THERE BE ANY DETRIMENTAL EFFECTS ON OVERSTORY? GROUND FIRE,FIRE FREQUENCY,SHRUB UNDERSTORY,PRODUCTIVITY

529. 07 750 WILL BURNING OF PILED BRUSH AND LOGS STERILIZE SOIL IN VICINITY OF THE PILE AND IF SO FOR HOW LONG? FIRE INTENSITY,SOIL,PRESCRIBED FIRE,FUEL REDUCTION,MICROORGANISM

530. 07 750 WOULD PRESCRIBED BURNING (SURFACE FIRE ONLY, PRIOR TO CUTTING), IN DOUGLAS-FIR STANDS, CHANGE THE SOIL AND WATERSHED CHARACTERISTICS TO THE POINT THAT REGENERATION WOULD BE AFFECTED? REPRODUCTION,SOIL,PRESCRIBED FIRE

531. 07 820 WHAT EFFECT DO LIGHT GROUND FIRES AT 3-5 YEAR INTERVALS HAVE ON GROWTH RATES OF EVEN AGED PONDEROSA PINE POLE AND YOUNG SAW TIMBER STANDS WHEN COMPETING VEGETATION IS NOT A FACTOR? FIRE FREQUENCY,GROUND FIRE,PRODUCTIVITY

532. 07 820 WHAT EFFECT DO REPEATED (3-5 YEAR INTERVALS) LIGHT GROUND FIRES HAVE ON AVAILABLE SOIL NUTRIENTS IN PONDEROSA PINE STANDS? FIRE FREQUENCY,GROUND FIRE,NUTRIENTS

533. 07 821 IN REGARD TO GROUND SURFACE TEMPERATURES AND THE GENERAL MICROCLIMATE NEEDED FOR WHITE PINE AND WHITE FIR REGENERATION, HOW DO CLEAR-CUT AREAS (WHERE SLASH IS LOPPED) COMPARE WITH LIKE AREAS THAT HAVE BEEN BURNED? REPRODUCTION,MANIPULATION COMPARISON,MICROCLIMATE

534. 07 821 IS THE USE OF LIGHT GROUND FIRES (IN CONNECTION WITH THINNING), IN DENSE AND EVEN-AGED FIR STANDS, DETRIMENTAL TO MARTEN AND FISHER POPULATIONS? GROUND FIRE,SMALL MAMMAL,DENSITY

535. 07 821 TO WHAT EXTENT DOES THE EXCLUSION OF GROUND FIRES FROM MEADOW LANDS (ELEVATION 5000-7000 FT.) PROMOTE LODGEPOLE PINE AND RED ALDER ENCROACHMENT ON NATURAL GRASS COVER? FIRE EXCLUSION,GROUND FIRE,SUCCESSION,GRASSLAND

536. 07 822 IN DECREASING THE NATURAL FIRE FREQUENCY, WILL LARGE CONCENTRATIONS OF NUTRIENTS BECOME LOCKED-UP IN LITTER AND SLASH AND THEREBY REDUCE TREE GROWTH? FIRE FREQUENCY,NUTRIENTS,LITTER,PRODUCTIVITY

537. 07 822 WHAT IS THE EFFECT OF DECREASING THE NATURAL FIRE FREQUENCY AS SEEN IN LITTER ACCUMULATION: DO RATES OF DECOMPOSITION CHANGE AS DEPTHS INCREASE? FIRE FREQUENCY,LITTER,DECOMPOSITION

538. 07 822 WHAT IS THE EFFECT OF DECREASING THE NATURAL FIRE FREQUENCY AS SEEN IN THE FREQUENCY, DISTRIBUTION AND ABUNDANCE OF ROOT ROT DISEASES OF CONIFERS? FIRE FREQUENCY,DISEASE

539. 07 822 WHAT TYPE OF LOGGING SYSTEM, AND FOLLOW-UP TREATMENT, WOULD NOW MOST LIKELY DUPLICATE THE EFFECTS OF PERIODIC NATURAL FIRES? MANIPULATION COMPARISON,FIRE FREQUENCY

540. 07 822 WITH A DECREASE IN THE NATURAL FIRE FREQUENCY OVER LARGE REGIONS, IS THERE A POSSIBILITY OF CERTAIN RARE PIONEER PLANT SPECIES BECOMING EXTINCT DUE TO THE GRADUAL ATTRITION OF VIABLE SEED SOURCES? FIRE FREQUENCY,SEED,REPRODUCTION

541. 08 510 WHAT IS THE EFFECT OF CHANGING THE SEASONAL TIMING AND REBURN FREQUENCY AS SEEN IN THE DOMINANT POST-FIRE PLANT SPECIES IN PINYON-JUNIPER INVADED SAGEBRUSH COMMUNITIES? TIMING,FIRE FREQUENCY,COMPETITION,SUCCESSION

542. 09 514 FIRE HAS CREATED THOUSANDS OF ACRES OF THICK SUPPRESSED STANDS OF LODGEPOLE PINE DUE TO THIS SPECIES' SEROTINOUS CONE NATURE. THEREFORE FIRE SHOULD BE CAREFULLY CONTROLLED IN LPP TO PREVENT REGENERATION OF THICK STANDS. IS THIS A VALID OBSERVATION? SEED,FIRE EFFECTS,POPULATION,PRESCRIBED FIRE,FIRE EXCLUSION,GROWTH,REPRODUCTION,COMPETITION,POPULATION,PRESCRIBED FIRE,FIRE EXCLUSION

543. 09 515 TO WHAT EXTENT DOES FIRE CHANGE THE SUSCEPTIBILITY OF INTERMOUNTAIN CONIFEROUS TREES TO INVASION BY FUNGI THROUGH FIRE SCARS? STEM,FIRE EFFECTS,DISEASE,CONIFEROUS FOREST

544. 09 518 DOES THE PRESENCE OF MANY SMALL FIRES IN AN AREA CAUSE WILDLIFE TO LEAVE THE AREA? ANIMAL BEHAVIOR,MOSAIC,WILDLIFE,FIRE DENSITY

545. 09 518 WHAT FACTORS CONTRIBUTE TO GROUND FUEL BUILD-UP IN AN AREA THAT HASN'T ANY HISTORY OF HEAVY GROUND FUEL? FUEL/BIOMASS ACCUMULATION

546. 09 519 ARE MEADOW LANDS AND NATURAL FORAGE AREAS GRADUALLY ENCROACHED UPON BY CONIFEROUS FOREST UNDER FIRE PROTECTION? FIRE EXCLUSION,CONIFEROUS FOREST,GRASSLAND,COMPETITION

547. 09 520 BECAUSE WE ARE CONTROLLING WILD LAND FIRES, WATERSHED CONDITIONS ARE BETTER IN THE UPSTREAM WATERSHED GENERALLY. STABILIZATION OF THE STREAMBEDS ARE RESULTING FROM THE EXCLUSION OF FIRE. BUT, WILLOW PATCHES THRIVE ON DISTURBED STREAM CHANNELS. THUS WILDFIRE IN THE UPLAND WATERSHEDS MAY HAVE SOME VALUE IN MAINTAINING THE WILLOW PATCHES FOR MOOSE POPULATIONS. IS THIS A FACT OR CAN NATURAL GEOLOGIC AND NATURAL RUNOFF CONDITIONS BE FREQUENT ENOUGH TO MAINTAIN MOOSE HABITAT? WATERSHED,FIRE EFFECTS,FIRE EXCLUSION,GAME ANIMAL,POPULATION,STREAM

548. 09 520 IS THERE RESEARCH ON THE PRESCRIPTION OF "GENTLE" BURNINGS? I THINK IT IS GENERALLY RECOGNIZED THAT PROPERLY CONTROLLED BURNING IS ESSENTIAL TECHNOLOGY IN

MANAGING MANY KINDS OF VEGETATION. WITH REGARD TO GENTLE BURNINGS, WHAT IS A GENTLE BURN IN RELATIONSHIP TO FIRE INTENSITY, RATE OF SPREAD, FIRE SIZE, AND FREQUENCY? PRESCRIBED FIRE,FIRE INTENSITY,FIRE BEHAVIOR,AREA SIZE,TIMING,GENERAL FIRE MANAGEMENT

549. 09 520 IT HAS BEEN SPECULATED THAT FIRE EXCLUSION IN MANY OF OUR CONIFEROUS FOREST TYPES IS A LIMITING FACTOR ON ELK POPULATIONS OR OTHER GAME POPULATIONS AND HABITAT. WILL FIRE EXCLUSION LIMIT OR REDUCE GAME POPULATIONS? QUANTITATIVE MEASUREMENT IS NEEDED ON THIS SUPPOSITION. FIRE EXCLUSION,GAME ANIMAL,POPULATION GROWTH,COMMUNITY

550. 09 521 ALONG THE WASATCH FRONT IN NORTHERN UTAH PREVENTION AND INITIAL ATTACK ARE GIVEN EXTREME EMPHASIS, BECAUSE THESE LANDS ARE ALL KEY MUNICIPAL WATERSHEDS. A QUESTION WE OFTEN ASK OURSELVES IS "WILL THIS PRACTICE OF FIRE EXCLUSION SOMETIME IN THE FUTURE HAVE AN ADVERSE EFFECT EXCEEDING THE BENEFITS OF A QUALITY AND QUANTITY WATER SUPPLY"? FIRE EXCLUSION,WATERSHED,CONIFEROUS FOREST

551. 09 521 WHILE IT IS BECOMING MORE UNIVERSALLY ACCEPTED THAT FIRE DOES AND CAN PLAY AN IMPORTANT ROLE IN FOREST LAND MANAGEMENT: IT IS STILL DIFFICULT TO SELL TO THE DECISION MAKERS IN MANY CASES. THE REASONS IT SEEMS ARE THAT RESEARCH RESULTS IN FREE-FIRE ZONES AND PRESCRIBED BURNING ARE NOT GETTING TO THE ADMINISTRATORS. ANSWERS TO THE FOLLOWING MIGHT HELP IN GIVING THE LAND MANAGERS A BETTER UNDERSTANDING AND AID IN THE DECISION MAKING PROCESS: WHAT ARE THE TRADE OFFS IN FREE-FIRE ZONES AND PRESCRIBED BURNING BOTH MONETARILY AND FROM A RESOURCE STANDPOINT? WHAT ARE THE SAVINGS TO THE TAX PAYER IN ESTABLISHING FREE-FIRE ZONES IN TERMS OF REDUCED MANPOWER AND DOLLARS IN PREVENTION, DETECTION, AND INITIAL ATTACK? DO WE KNOW WHAT THE BENEFITS ARE IN QUALITATIVE AND QUANTITATIVE TERMS TO WILDLIFE INCLUDING THE SMALL BIRDS AND MAMMALS? HOW DO WE DEAL WITH PUBLIC OPINION WITH REGARD TO THE SMOKEY BEAR SYNDROME, OF "PUT THEM ALL OUT AT ANY COST"?. AND ALSO FROM A SOCIOLOGICAL STANDPOINT, DO WE NEGATE ANY OF OUR PREVENTION EFFORTS OF THE PAST IN ESTABLISHING FREE-FIRE ZONES? FIRE EXCLUSION,FIRE EFFECTS,ECONOMIC EFFECTS,GENERAL FIRE MANAGEMENT,PRESCRIBED FIRE,WILDLIFE,SMALL MAMMAL,BIRD,ECOSYSTEM

552. 09 522 HOW WOULD INTENSE FIRE AFFECT MORTAR IN ARCHEOLOGICAL RUINS? WOULD STABILITY OF STANDING WALLS BE WEAKENED? HUMAN ECOLOGY,FIRE EFFECTS,HEAT EFFECTS,AESTHETICS

553. 09 522 ON AN INTENSE CROWN FIRE, WHAT EFFECT IN TREE WEAKENING CAN BE EXPECTED AT THE FIRE EDGE? FIRE EFFECTS,AREA SIZE,MORTALITY,CROWN BURN

554. 09 523 MY FIRE EXPERIENCE HAS BEEN LIMITED TO SMALL FIRES IN THE PINYON-JUNIPER AND SAGEBRUSH TYPES SO MY QUESTIONS ARE ABOUT THE EFFECTS OF FIRES IN THESE TYPES. DOES A FIRE IN THE PINYON-JUNIPER TYPE HAVE ENOUGH IMPACT ON THE ENVIRONMENT TO WARRANT SUPPRESSION?

BECAUSE OF THE LACK OF GROUND COVER UNDER PINYON IS THE IMPACT FROM THE HEAT OF THE FIRE SUFFICIENT TO CAUSE DAMAGE TO THE SOIL? IS THE CONVERSION FROM PINYON TO GRASS AFTER A FIRE BENEFICIAL? SHOULD IT BE ENCOURAGED? TO WHAT EXTENT, IF AT ALL, IS THE WATERSHED AFFECTED BY THE REMOVAL OF PINYON? HOW MANY ACRES OF PINYON WOULD HAVE TO BE INVOLVED IN A FIRE BEFORE ANIMAL LIFE WOULD BE SERIOUSLY AFFECTED? CAN THE EFFECTS OF FIRE ON SOIL AND WILDLIFE IN THIS TYPE BE COMPARED TO A CHAINING PROJECT? FIRE EFFECTS,FIRE EXCLUSION,COMPETITION,SUCCESSION,GRASSLAND,WATERSHED,ARE A SIZE,WILDLIFE,SOIL,MANIPULATION COMPARISON,ECOSYSTEM

555. 09 730 WHAT IS THE EFFECT OF FIRE SUPPRESSION ON PINYON-JUNIPER INVASION OF A GIVEN AREA? WHAT IS THE EFFECT OF UNSUPPRESSED WILDFIRES IN GRASS-BRUSH ASSOCIATIONS IN RELATION TO ASSOCIATED WILDLIFE? WHAT CHANGES OCCUR IN SMALL MAMMAL AND SMALL BIRD POPULATIONS IN CONTROLLED BURNS OF BRUSHLAND? CAN MANAGEMENT FOR ANNUAL GRASSES BE DONE SUCCESSFULLY WITH FIRE? FIRE EXCLUSION,FIRE EFFECTS,COMPETITION,WILDLIFE,CONIFEROUS FOREST,SHRUBLAND,GRASSLAND,SMALL MAMMAL,BIRD,PRESCRIBED FIRE,ECOSYSTEM

556. 09 731 DOES WILDFIRE NORMALLY TAKE PLACE UNDER CONDITIONS WHEN THE CLEARING INDEX (AIR POLLUTION CONTROL) IS FAVORABLE FOR BURNING? WHAT IS THE "PUBLIC'S" OPINION OF VIEWING A BURNED PINON-JUNIPER STAND FROM AN AESTHETICS POINT OF VIEW? TIMING,MICROCLIMATE,AIR POLLUTION,PUBLIC REACTION,AESTHETICS,CONIFEROUS FOREST,VALUE JUDGEMENT

557. 09 731 WE ARE LOCATED IN A PINON-JUNIPER TYPE TIMBER AREA. THEREFORE, OUR NEEDS HERE ARE IN CONNECTION WITH THAT TYPE RATHER THAN THE COMMERCIAL TIMBER STANDS. WE HAVE CONSIDERABLE PROBLEMS WITH LIGHTNING STRIKES INVOLVING FIRE IN 1 OR 2 TREES. OUR CONCERNS ARE FOR THE NEED FROM AN ECOLOGICAL STANDPOINT - HOW IMPORTANT IS IT TO TAKE ACTION ON EACH FIRE? WHAT EFFECT DOES A WILDFIRE ON AN AREA HAVING 60%+ CANOPY COVER HAVE ON SOIL TEMPERTURE, SOIL EROSION POTENTIAL, SOIL STERILIZATION, ETC? NORMALLY IN THIS AREA 60% CANOPY WILL REDUCE THE UNDERSTORY TO A POINT IT WILL NOT CARRY A GROUND FIRE. WHAT EFFECT DOES FIRE HAVE IN A PINON-JUNIPER STAND ON THE MINOR WILDLIFE SPECIES (RABBITS, SONG BIRDS, ETC.) HABITAT? BY ALLOWING A FIRE TO BURN DO WE ELIMINATE THESE SPECIES? FIRE EFFECTS,LIGHTNING-CAUSED FIRE,SMALL MAMMAL,BIRD,SOIL,HEAT EFFECTS,CROWN,GROUND FIRE

558. 10 069 DOES NUTRIENT ENRICHMENT OF STREAMS AFFECT COLIFORM LEVELS? NUTRIENTS,STREAM,MICROORGANISM

559. 10 069 WHAT MIGHT BE THE EFFECT OF VARIOUS DEGREES OF LITTER AND VEGETATION REDUCTION AS SEEN IN THE WATER BALANCE, STREAM FLOW PLUS SOIL WATER BALANCE? FUEL REDUCTION,HYDROLOGY

560. 10 070 HOW CAN FIRE BE USED TO PRODUCE A NORMALLY STOCKED STAND FROM A DOGHAIR LODGEPOLE PINE STAND? DENSITY,POPULATION

561. 10 070 HOW DO PEOPLE OF VARIOUS TYPES PERCEIVE THE IDEA OF FIRE, EITHER MAN-CAUSED, PRESCRIBED, OR NATURAL, IN THEIR VALUE SYSTEM? SOCIAL EFFECTS

562. 10 070 HOW IS FIRE RELATED TO THE PRODUCTION OF FIREWOOD IN RECREATIONAL AREAS? RECREATION,FUEL/BIOMASS ACCUMULATION

563. 10 070 HOW WELL CAN PEOPLE OF VARIOUS OCCUPATIONS IDENTIFY EVIDENCES THAT A FOREST HAS BURNED AT VARYING LENGTHS OF TIME AGO? SOCIAL EFFECTS

564. 10 071 CAN THE RATE OF NUTRIENT RELEASE RESULTING FROM FOREST BURNING BE RELATED TO SUCH FIRE CHARACTERISTICS AS FIRE FREQUENCY, INTENSITY, OR RATE OF SPREAD? NUTRIENTS,FIRE FREQUENCY,FIRE INTENSITY

565. 10 071 FOLLOWING A HOT FIRE, WHAT IS THE ULTIMATE FATE OF THE RICH LAYER OF NUTRIENTS LYING ON THE SOIL SURFACE IN THE FORM OF ASH IN LODGEPOLE PINE ECOSYSTEMS? FIRE INTENSITY,ASH,NUTRIENTS

566. 10 071 FOLLOWING FOREST BURNING, MIGHT SOIL NITROGEN LOSSES BE COMPENSATED BY HIGHER SOIL TEMPERATURES IN A SORT OF TRADE-OFF, RESULTING IN AN IMPROVEMENT OF SITE CONDITIONS FOR TREE GROWTH? PRODUCTIVITY,NUTRIENTS,MICROCLIMATE

567. 10 071 IN AREAS WHERE LOGGING IS USUALLY FOLLOWED BY BROADCAST BURNING, WHAT SPECIFIC CHANGES IN SOIL PROPERTIES (BOTH CHEMICAL AND PHYSICAL) MIGHT RESULT FROM FIRE? FUEL REDUCTION,SOIL

568. 10 071 IN CERTAIN FOREST SYSTEMS, IS IT DESIRABLE TO CONTROL THE SEVERITY OF BURN (I.E., ONLY PART OF THE LITTER CONSUMED) IN ORDER TO REDUCE EXTREME PH AND/OR C.E.C. CHANGES? CAN THESE CHANGES BE IDENTIFIED AND RELATED TO CERTAIN SOIL OR FOREST TYPES? FUEL REDUCTION,NUTRIENTS

569. 10 071 WHAT EFFECT DOES FIRE HAVE ON SOIL MICROORGANISM POPULATIONS, ESPECIALLY MYCORRHIZAL FUNGI WHICH MIGHT BE QUITE IMPORTANT IN TREE SEEDLING ESTABLISHMENT? FUNGUS,ROOTS,REPRODUCTION

570. 10 071 WHAT IS THE EFFECT OF A FOREST FIRE ON THE WATER QUALITY FROM A BURNT AREA, ESPECIALLY WHEN THE FIRE IS INTENSE AND LIMITS ESTABLISHMENT OF SUBSEQUENT PLANT COVER? HYDROLOGY,NUTRIENTS

571. 10 077 A QUESTION ARISING FROM FIRE SUPPRESSION CONCERNS THE PRESENT UPPER ELEVATIONAL LIMIT OF TREE GROWTH. WITH REDUCED FIRE INCIDENCE, HOW CAN THIS BE EXPECTED TO RESPOND? WILL IT REMAIN STATIONARY OR WILL MOVEMENT UPWARD ENSUE? FIRE FREQUENCY,ZONATION,ECOTONE

572. 10 077 WHAT ARE HYDROLOGIC CONSEQUENCES OF BURNING ON SNOW DISTRIBUTION AND REDISTRIBUTION, EFFECTS ON SNOW MELT PATTERNS AND STREAM FLOW? FIRE CLOSE TO TIMBERLINE WOULD SEEM CAPABLE OF INDUCING MARKED CHANGES IN SNOW DISTRIBUTION AND MELT BY INTRODUCING AN ALPINE ENVIRONMENT AT SUB ALPINE ALTITUDES. IS THIS SUFFICIENT TO CAUSE SIGNIFICANT HYDROLOGIC RESPONSES? SNOW,HYDROLOGY,ZONATION,MOUNTAIN

573. 10 079 CATALOG OF FIRE-TYPE VEGETATION IN THE COLORADO ROCKY MOUNTAINS FROM VARIOUS ELEVATIONS-E.G: PRAIRIE, MONTANE, SUB-ALPINE AND ALPINE. EXPERIMENT ORIENTED QUESTION,FIRE FREQUENCY,FUEL/BIOMASS ACCUMULATION

574. 10 079 WHAT IS THE RELATIONSHIP BETWEEN FIRE AND TIMBERLINE IN THE NORTH AMERICAN ROCKY MOUNTAIN ALPINE, AND AT THE FOREST-SHORT GRASS PRAIRIE ECOTONE? MOUNTAIN,ECOTONE,ZONATION

575. 10 191 AS MANY ASPEN STANDS REVERT TO THE CONIFEROUS TYPES, WILL FIRE SUPPRESSION AND EXCLUSION DIMINISH THE TOTAL AREA NOW COVERED WITH ASPEN? AREA SIZE,SUCCESSION,FIRE EXCLUSION,DECIDUOUS FOREST

576. 10 191 IS FIRE EXCLUSION RESPONSIBLE FOR THE TWO AND THREE-STORIED DENSE ASPEN STANDS USUALLY FOUND IN THE YOUNGER STANDS OF 100+ YEARS? IF SO, HOW WILL THESE STANDS DIFFER IN THE FUTURE COMPARED WITH THE OLDER STANDS OF TODAY WHICH HAVE EXPERIENCED GROUND FIRES? DENSITY,GROUND FIRE,AGE,DECIDUOUS FOREST

577. 10 191 MANY OPEN, OVERMATURE ASPEN STANDS, WITHOUT A CONIFEROUS UNDERSTORY, FAIL TO PRODUCE SUCKERS. DOES FIRE EXCLUSION PREVENT ASPEN SUCKERING IN THESE OLD STANDS, AND WILL THESE STANDS REVERT TO GRASS LAND OR SHRUBS ONCE THE OVERSTORY IS GONE? REPRODUCTION,SUCCESSION,FIRE EXCLUSION,AGE,DECIDUOUS FOREST

578. 10 192 DO LARGE INSECT OUTBREAKS IN ENGELMANN SPRUCE, LODGEPOLE PINE AND PONDEROSA PINE INCREASE FIRE HAZARD? IF SO, WHAT TERMS DO WE ACTUALLY HAVE TO EVALUATE HAZARD INCREASE? FOR HOW LONG IS HAZARD INCREASED? CAN AN INCREASE BE EQUATED TO DOLLAR EXPENDITURES THAT SHOULD BE SUBTRACTED FROM INSECT CONTROL COSTS? INSECT,FUEL/BIOMASS ACCUMULATION,ECONOMIC EFFECTS

579. 10 193 UNDER WHAT CONDITIONS IS CONTROLLED BURNING LIKELY TO BE A SATISFACTORY MEANS FOR: A) PREVENTING OR REDUCING EXCESSIVE BUILDUP OF FOREST FUELS, B) MAINTAINING FIRE-DEPENDENT FOREST TYPES? FUEL/BIOMASS ACCUMULATION

580. 10 193 UNDER WHAT CONDITIONS, IF ANY, IS CONTROLLED BURNING AN EFFECTIVE MEANS FOR CONTROLLING SPRUCE BARK BEETLE POPULATIONS? PRESCRIBED FIRE,INSECT

581. 10 275 WHAT MIGHT BE THE EFFECT OF CHANGING THE AREAL PROPORTION AND SPATIAL LOCATION OF BURNED, OPEN AREA WINTER RANGE VS. DENSE-UNBURNED CONIFER STANDS, AS SEEN IN THE POPULATION DENSITIES OF BIG GAME ANIMALS? AREA SIZE,MOSAIC,SHRUBLAND,DENSITY,POPULATION GROWTH,GAME ANIMAL

582. 10 283 HOW IS MACRO-INVERTERRATE SPECIES DIVERSITY IN STREAMS AFFECTED BY FIRE ON THE WATERSHED? WHAT CONTROLS THE RECOVERY RATE? STREAM,ARTHROPODS,SPECIES DIVERSITY,TIMING

583. 10 283 HOW LONG DOES IT TAKE FOR PRE-FIRE NUTRIENT LEVELS TO BECOME RE-ESTABLISHED IN THESE STREAMS? STREAM,NUTRIENTS,TIMING

584. 10 283 UNDER WHAT CONDITIONS DO FIRES RESULT IN INCREASES OR DECREASES IN PRIMARY PRODUCTION IN STREAMS DRAINING THE BURNED AREAS? STREAM,PRODUCTIVITY

585. 10 283 WHAT ARE THE NUTRIENT LEVELS IN STREAMS DRAINING BURNED WATERSHEDS? STREAM,NUTRIENTS,TIMING

586. 10 284 HOW CAN FIRE BE USED TO ENHANCE THE RANGE OF BIGHORN SHEEP--OPEN AREAS IN RELATION TO ESCAPE COVER? IMPROVING FORAGE CONDITIONS? RANGE SANITATION (EFFECTS ON PARASITES AND INTERMEDIATE HOSTS)? GAME ANIMAL

587. 10 306 IS DUFF AND HUMUS REMAINING AFTER FIRE A GOOD INDICATION OF INTENSITY? DUFF,FIRE INTENSITY,FUEL REDUCTION

588. 10 306 WHAT FREQUENCY OF BURNING OF PONDEROSA PINE RESULTS IN OPEN STANDS, WITH GRASS OR SHRUB UNDERSTORY? WHAT OTHER FACTORS MAY AFFECT UNDERSTORY RESPONSE? FIRE FREQUENCY,HERBAGE UNDERSTORY,SHRUB UNDERSTORY,DENSITY,COMMUNITY,VEGETATION

589. 10 306 WHAT SPECIES OF PLANT SEED CAN BE EXPECTED TO SURVIVE FIRE AND IN WHAT GROUND LAYERS RELATED TO FIRE INTENSITY? EXPERIMENT ORIENTED QUESTION,SEED,HEAT EFFECTS,FIRE INTENSITY

590. 10 524 AFTER A FIRE THE BURN IS USUALLY PLANTED TO GRASS IMMEDIATELY TO STABILIZE THE SOIL. HAVE THERE BEEN STUDIES DONE ON HOW THIS GRASS STAND AFFECTS CHANCES OF GETTING A TIMBER STAND RE-ESTABLISHED? SOIL EROSION,COMPETITION,MANIPULATION COMPARISON

591. 10 526 BECAUSE OF ADVERSE PUBLIC REACTION TO SLASH BURNING, ATTEMPTS HAVE BEEN MADE TO BURN AT HIGHER TEMPERATURES AND THUS REDUCE PARTICULATE PRODUCTS. GASEOUS PRODUCTS ARE THEREBY INCREASED. ARE THESE GASES MORE HARMFUL TO HEALTH AND ENVIRONMENT THAN THE ORIGINAL SMOKE PARTICLES? PUBLIC REACTION,HUMAN ECOLOGY,AIR POLLUTION,MANIPULATION COMPARISON,VALUE JUDGEMENT,PRESCRIBED FIRE

592. 10 526 HOW SHOULD SEED BE PLANTED ON A BURNED OUT AREA? IS THE SOIL STERILE? HOW ABOUT EXCESSIVE HEAT AND DRYING OUT DUE TO BLACK COLOR? WOULD A STRAW MULCH HELP? SEED,CHARCOAL,ASH,MICROCLIMATE,MANIPULATION COMPARISON,REPRODUCTION,SOIL

593. 10 526 WHAT ARE THE ALTERNATIVES TO PRESCRIBED BURNING THAT WILL PROVICE THE NECESSARY PH, MINERALS, NUTRIENTS,ETC. FOR FUTURE ECOSYSTEM CONTINUATION? WILL REMOVAL OF LOGGING SLASH AND NATURAL SLASH IMPERIL THE NATURAL ABILITY OF THE FOREST TO PERPETUATE ITSELF IN A HEALTHY MANNER? FIRE EXCLUSION,PRESCRIBED FIRE,PH,NUTRIENTS,HUMAN DISTURBANCE,ECOSYSTEM

594. 10 526 WHAT EFFECT DOES A HEAVY SNOWPACK HAVE ON AN EXTENSIVELY BURNED AREA WHICH HAS BEEN SEEDED THE PRECEEDING SUMMER? HOW CAN ANY ADVERSE EFFECTS, IF ANY ARE CREATED, BE PREVENTED? SNOW,SOIL-WATER RELATIONS,SEED,REPRODUCTION

595. 10 530 ARE RED SOILS FOLLOWING BURNING IN THE COLORADO ROCKIES INDICATIVE OF STERILIZATION? AT WHAT TEMPERATURE DO THE ORGANIC MATTER AND SOIL FAUNA WITHIN THE TOP INCH OF SOIL BECOME DESTROYED? WHAT ARE THE MAXIMUM SOIL SURFACE TEMPERATURES DURING BURNING AS AFFECTED BY VARIABLES OF SLOPE, DEPTH OF SLASH, FUEL TYPES? WHAT ARE THE INSULATION QUALITIES OF BARK? E.G. CAMBIUM CANNOT BE DESTROYED AT TEMPERATURES OF "X" DEGREES IF PINE BARK IS "Y" INCHES THICK. WHAT ARE THE EFFECTS OF DIRECT SEEDING OF EITHER PONDEROSA PINE OR ENGELMANN SPRUCE INTO ASH FOLLOWING A FIRE? HOW MUCH FUEL MUST BE BURNED TO SIGNIFICANTLY INFLUENCE THE AMOUNT OF CO2 AND OTHER GASES IN OUR ATMOSPHERE? MICROCLIMATE,ORGAN,SOIL,FIRE EFFECTS,HEAT EFFECTS,STEM,CONIFEROUS FOREST,ASH,PLANTING

596. 10 530 I PERSONALLY BELIEVE THE LAND MANAGER COULD USE FIRE TO HIS ADVANTAGE IN TYPE CONVERSION, MAINTENANCE OF A TYPE, THINNING, FUEL REDUCTION, WILDLIFE HABITAT IMPROVEMENT. UNFORTUNATELY, WE (GENERALLY) LIVE UNDER A STIGMA THAT FIRE IS "BAD" WHILE WE COULD BE USING IT TO OUR ADVANTAGE DAILY. FIRE CAN BE USED TO THIN PONDEROSA PINE AS THEY DO WITH SOUTHERN PINES: HAS THERE BEEN RESEARCH PERFORMED IN THE ROCKIES CONCERNING THIS AND, IF NOT, WHY? CAN GROUND FIRES BE USED TO CONTROL MISTLETOE IN PONDEROSA PINE? WHAT INFLUENCE DO GROUND FIRES HAVE ON THE GERMINATION OF PONDEROSA PINE SEED? WHAT TEMPERATURES EXIST ON SOIL'S SURFACE FROM ABSORPTION OF SHORT-WAVE RADIATION FOLLOWING A BURN AND THE ASH IS BLACK? HOW SERIOUS ARE THE GASEOUS POLLUTANTS IN THE AIR FROM A BURN? EXAMPLE: 600 ACRES OF GREEN OAKBRUSH BURNED IN FOUR HOURS ON A CLEAR DAY WITH A 20 MPH WIND. FIRE EFFECTS,GROUND FIRE,SEED,REPRODUCTION,CONIFEROUS FOREST,MICROCLIMATE,ASH,CHARCOAL,AIR POLLUTION,SHRUB UNDERSTORY,FIRE EXCLUSION,DISEASE

597. 10 531 ENVIRONMENTALLY, WHAT DIFFERING EFFECTS OCCUR BETWEEN FIRES AND TIMBER HARVESTS - RECOGNIZING OF

COURSE DIFFERING DEGREES OF BURN AS WELL AS HARVEST METHODS? MANIPULATION COMPARISON,HUMAN DISTURBANCE,FIRE EFFECTS

598. 10 531 THERE IS INCREASING FEELING AMONG LAND MANAGERS THAT FIRES SHOULD BE ALLOWED TO BURN AS A NATURAL OCCURRENCE. WITH INCREASING HUMAN POPULATIONS AND ACCOMPANYING INCREASED RISK OF MAN-CAUSED FIRES, CAN WE AFFORD TO PERMIT UNCONTROLLED BURNING? HUMAN ECOLOGY,VALUE JUDGEMENT,MAN-CAUSED FIRE,FIRE EXCLUSION

599. 10 531 WITH INCREASING EMPHASIS ON "CLEANING-UP" AFTER TIMBER SALES WE ARE REQUIRED TO DO A MORE COMPLETE SLASH DISPOSAL JOB. HOW SERIOUS IS SLASH OR OTHER WOOD SMOKE POLLUTION? WE NEED BETTER ANSWERS. TODAY, WOOD SMOKE IS OFTEN CONSIDERED JUST AS "BAD" AS FACTORY OR AUTO POLLUTION. VALUE JUDGEMENT,FUEL REDUCTION,PUBLIC REACTION,AIR POLLUTION,PRESCRIBED FIRE

600. 10 533 WHAT EFFECT IS THE EXCLUSION OF FIRE HAVING ON NATURAL REGENERATION OF PONDEROSA PINE ON THE UNCOMPAHGRE PLATEAU OF COLORADO? WE HAVE AREAS OF HEAVY POLE STANDS OF PONDEROSA PINE THAT WERE ESTABLISHED 40 TO 70 YEARS AGO. SINCE THAT TIME THERE HAS BEEN ESSENTIALLY NO REGENERATION. WE DO HAVE HEAVY GRAZING IN SOME PINE STANDS, BUT WE ALSO HAVE SOME ISOLATED TRACTS THAT HAVE BEEN PROTECTED FROM GRAZING AND FIRE. WE STILL HAVE NO SIGNIFICANT NATURAL REGENERATION IN ANY OF THE STANDS. FIRE EXCLUSION,REPRODUCTION,POPULATION,HERBIVORY

601. 10 534 IN THE COLORADO ROCKIES, WHAT IS THE RELATIVE FREQUENCY OF LIGHTNING FIRE STARTING FROM HITS IN SNAGS AS COMPARED TO FIRES STARTED FROM HITS IN LIVE TREES? LIGHTNING-CAUSED FIRE,SNAG,FLAMMABILITY,CONIFEROUS FOREST,FIRE FREQUENCY

602. 10 535 AT WHAT LEVEL OF FIRE INTENSITY ARE ROOTS AND UNDERGROUND PARTS OF PLANTS DAMAGED OR DESTROYED FOR VARIOUS DEPTHS AND TYPES OF SOIL? FIRE INTENSITY,ROOTS,MORTALITY,SOIL

603. 10 535 CAN A SELECTED SPECIES, GENUS, OR FAMILY OF A PARTICULAR PLANT BE ERADICATED BY FIRE? IF SO, WHAT SPECIES, ETC. AND HOW SHOULD FIRE BE APPLIED AS A MANAGEMENT TOOL? GENERAL FIRE MANAGEMENT,VEGETATION,MORTALITY,SEED,ROOTS

604. 10 535 CAN FIRE BE USED AS AN EFFECTIVE WILDLIFE HABITAT MANAGEMENT TOOL--OR ARE THE BENEFITS IN TERMS OF BROWSE PRODUCED, AND AVAILABILITY, TOO SHORT IN TIME BEFORE ANOTHER BURN IS NEEDED, MAKING FIRE AN UNECONOMICAL WILDLIFE MANAGEMENT TOOL? HOW OFTEN WOULD YOU NEED TO BURN IN OAK BRUSH, ASPEN FOR BROWSE PRODUCTION ON A WINTER RANGE? SHRUBLAND,SUCCESSION,TIMING,PRESCRIBED FIRE,PRODUCTIVITY

605. 10 535 CAN THE LOSS OF SOIL NUTRIENTS BE CONTROLLED BY LIMITING THE SIZE OF SLASH PILES IN A CLEAR-CUT

PILE-AND-BURN OPERATION? NUTRIENTS,SOIL,FUEL REDUCTION,SIZE CLASS

606. 10 535 DOES FIRE HAVE AN EFFECT ON THE ERODIBILITY OF AN OTHERWISE STABLE SOIL? IF SO, AT WHAT LEVEL OF INTENSITY? FIRE INTENSITY,SOIL STRUCTURE,SOIL EROSION

607. 10 535 HOW MUCH HEAT CAN LODGEPOLE, SPRUCE OR FIR RECEIVE BEFORE DAMAGES OCCUR TO THE TREES INNER SYSTEM? SUCH AS LOSS OF ABILITY TO TRANSLOCATE WATER TO THE LIMBS? HEAT EFFECTS,MORTALITY,ORGANISM,STEM,ROOTS

608. 10 535 IN AN ASPEN-LODGEPOLE PINE STAND AFTER A FIRE--WHY DOES ASPEN BECOME THE DOMINANT? SUCCESSION,DECIDUOUS FOREST,CONIFEROUS FOREST

609. 10 535 WHAT NUTRIENTS ARE LOST FROM THE SOIL DUE TO A FIRE? HOW IS THE PRODUCTIVITY OF A SOIL AFFECTED BY A FIRE? NUTRIENTS,SOIL

610. 10 535 WHICH SPECIES, SPRUCE OR FIR, IS MOST APT TO REGENERATE NATURALLY IN THE SPRUCE-FIR FOREST OF COLORADO AFTER FIRE? REPRODUCTION,VEGETATION

611. 10 535 WILL SOIL FERTILIZING HELP IN ESTABLISHING PERMANENT VEGETATION AFTER AN AREA HAS SUFFERED AN INTENSE BURN? IF SO--WHAT ARE THE COST-BENEFIT RATIOS OF SUCH A PROGRAM? MANIPULATION COMPARISON,FIRE INTENSITY,NUTRIENTS,VEGETATION

612. 10 535 AFTER A FIRE, ARE INSECT POPULATIONS MORE APT TO RECOVER FASTER THAN RODENTS? INSECT,SMALL MAMMAL,POPULATION GROWTH

613. 10 536 ARE ALL LODGEPOLE PINE STANDS A RESULT OF PAST FIRE HISTORY? THE FRONT RANGE OF COLORADO HAS LODGEPOLE PINE STANDS WITH NON-SEROTINOUS OR STERILE CONES AND LITTLE EVIDENCE OF FIRE HISTORY. TO CLEARCUT OR BURN IN THESE STANDS RESULTS IN LITTLE OR NO REGENERATION. FIRE HISTORY,FIRE EFFECTS,REPRODUCTION,CONIFEROUS FOREST,SEED,POPULATION

614. 10 536 DO FREQUENT FIRES OF 10 ACRES AND OVER IN A FOREST AREA DISCOURAGE RESIDENTIAL DEVELOPMENTS WITHIN THAT FORESTED AREA? HUMAN ECOLOGY,FIRE FREQUENCY,AREA SIZE,PUBLIC REACTION

615. 10 536 DOES EXCLUDING FIRE FROM A CONIFEROUS FOREST CREATE CONDITIONS WHEREBY WHEN A FIRE DOES START IT SPREADS FASTER AND WILL MORE LIKELY BE LARGER IN SIZETHAN IN FORESTS WHERE NO PROTECTION EXISTS OR PRESCRIBED FIRES ARE COMMON? FIRE EXCLUSION,FIRE EFFECTS,FIRE BEHAVIOR,FUEL/BIOMASS ACCUMULATION,

616. 10 536 HAVE RESIDENTIAL DEVELOPMENTS IN FORESTED AREAS AFFECTED THE FREQUENCY OR SIZE OF MAN-CAUSED FIRES? HUMAN ECOLOGY,ECONOMIC EFFECTS,FIRE FREQUENCY,AREA SIZE,MAN-CAUSED FIRE

617. 10 536 IS FIRE EXCLUSION IN COLORADO ROCKY MOUNTAIN FORESTS AS CRITICAL FROM A FUEL BUILD-UP STANDPOINT AS ARE OTHER AREAS: I.E. WEST COAST, NORTHWEST FORESTS? FIRE EXCLUSION,FUEL/BIOMASS ACCUMULATION,MOUNTAIN,CONIFEROUS FOREST

618. 10 536 WHAT IS THE EFFECT OF HUMAN POPULATION ON FIRE OCCURRENCE? DO THE NUMBER OF FIRE STARTS DECREASE AS POPULATION INCREASES BECAUSE PEOPLE ARE WATCHING PEOPLE? HUMAN ECOLOGY,MAN-CAUSED FIRE,POPULATION GROWTH

619. 10 537 IS IT A MUST TO BURN LODGEPOLE CUT-OVER AREAS TO GET REPRODUCTION BY PROVIDING HEAT FOR CONE OPENING OR WILL HEATING OF THE SUN BE JUST AS GOOD? FIRE INTENSITY,MANIPULATION COMPARISON,REPRODUCTION,SEED,ORGAN,MICROCLIMATE,TOPOGRAPHY

620. 10 538 DOES OUR PRESENT METHOD OF SITE PREPARATION (PILING & BURNING, CHOPPING) ADEQUATELY SUBSTITUTE FOR A NATURAL FIRE OR NOT? ARE THE RESULTS SIMILAR IN CONNECTION WITH HERBACOUS VEGETATION, WILDLIFE HABITAT, EROSION, PREPETUATING SEROTINOUS CONES, SOIL NUTRIENTS AND PH? MANIPULATION COMPARISON,FIRE INTENSITY

621. 10 538 UNDER WHAT CONDITION (FUEL TYPE & AMOUNT, WIND, RH, TEMP., ETC.) CAN A GROUND FIRE (SAY A CONTROLLED BURN) GO THROUGH A STAND WITHOUT DAMAGE TO STANDING TREES OR AT LEAST A MINIMUM OF DAMAGE? FOR THE FUEL-TYPES AND AMOUNT, WHAT WOULD BE A SIMPLE METHOD OF DETERMINING THIS? GROUND FIRE,MORTALITY,VEGETATION

622. 10 539 WHAT IS THE RELATIONSHIP OF COMPACTNESS OF SLASH TO INTENSITY OF HEAT? FUEL REDUCTION,FIRE INTENSITY,FUEL/BIOMASS ACCUMULATION

623. 10 541 GENERALLY, MY FEELING IS THAT FIRE IS WASTEFUL OF ALL RESOURCES. AS DEMANDS FOR THESE RESOURCES INCREASE, INTENSIVE USE OF OTHER OPTIONS FOR FOREST MANIPULATION WHICH ARE LESS WASTEFUL SHOULD BE USED. ALTHOUGH USE OF FIRE MAY BE THE MOST ECONOMICAL ON A SHORT TERM BASIS: LONG TERM ANALYSIS SHOULD SHOW THAT IT IS DETRIMENTAL IN THE LONG RUN. ECONOMIC EFFECTS,FIRE EXCLUSION,FIRE EFFECTS,HUMAN ECOLOGY,VALUE JUDGEMENT

624. 10 541 I AM DISCOURAGED FROM USING PRESCRIBED BURNING AS A MANAGEMENT TOOL IN MOUNTAINOUS LANDS DUE TO SOIL AND HYDROLOGIC CONSIDERATIONS. GENERALLY MOUNTAIN SOILS DO NOT HAVE THE CAPACITY TO WITHSTAND CONTROLLED BURNS. VERY SELDOM DOES ONE ACHIEVE THE BURN AS PRESCRIBED DUE TO FUEL DISTRIBUTION AND CHANGING WEATHER CONDITIONS. THE RESULT IS USUALLY EITHER AN INADEQUATE BURN OR A DESTRUCTIVE BURN WHICH DESTROYS THE PRODUCTIVITY OF THE SITE. WHEN MANAGING MOUNTAIN FOREST LAND IN A MULTI-PURPOSE SITUATION, ALTERNATE OPTIONS OF STAND MANIPULATION SHOULD BE USED RATHER THAN FIRE EXCEPT FOR PILING AND BURNING SLASH ON SLOPES EXCEEDING 30%. MOUNTAIN,FIRE EFFECTS,SOIL,PRESCRIBED FIRE,HYDROLOGY,MICROCLIMATE,PRODUCTIVITY

625. 10 541 THE QUESTION OF FIRE IN UNMANAGED LANDS SUCH AS WILDERNESS IS ONE NEEDING FURTHER STUDY. THIS PHILOSOPHY CREATES PROBLEMS IN PROTECTING ADJACENT MANAGED LANDS AS WELL AS PROTECTING THE GENERAL CHARACTER OF THE LAND IN QUESTION. A GOOD EXAMPLE OF ADVERSE EFFECTS OF UN-MANAGED LAND ON ADJACENT LAND IS THE CURRENT INSECT EPIDEMIC IN YELLOWSTONE NATIONAL PARK AS IT THREATENS FOUR ADJACENT NATIONAL FORESTS. WHAT WILL BE THE CHARACTER OF THAT GENERAL AREA TEN YEARS FROM NOW? POSSIBLY A "SEA OF SNAGS". VALUE JUDGEMENT,FIRE EXCLUSION,INSECT,GENERAL FIRE MANAGEMENT

626. 10 541 THERE ARE CERTAIN ECOSYSTEMS WHICH ARE DEPENDENT ON FIRE FOR THEIR EXISTENCE. THE QUESTION WHICH MUST BE ANSWERED IS WHETHER IT IS MORE IMPORTANT TO MAINTAIN THESE ECOSYSTEMS OR SHOULD FIRE BE ELIMINATED ALLOWING TRANSITION TO ANOTHER ECOSYSTEM? FIRE EFFECTS,ECOSYSTEM,FIRE EXCLUSION,VALUE JUDGEMENT

627. 10 689 VIRTUALLY ALL GAME MANAGERS WHO DEAL WITH LARGE, UNDULATING POPULATIONS THAT PREDOMINATELY UTILIZE BOTH BROWSE AND GRASS SPECIES FOR FOOD SUPPLIES HAVE REALIZED THAT CLIMAX CONIFEROUS FOREST STANDS CONTRIBUTE VERY LITTLE TO THE ANNUAL PRODUCTION OF FOOD SUPPLY. THEREFORE, ANY MEANS THROUGH WHICH THIS SOLID OVERSTORY OF FOREST CANOPY CAN BE REMOVED TENDS TO INCREASE THE AVAILABLE FOOD SUPPLY FOR SUBSISTENCE OF THESE ANIMALS AND THEREBY DISPERSES GIVEN POPULATIONS OVER A LARGER AREA OF GROUND. AS A RESULT, WE ARE CONSTANTLY SEARCHING FOR METHODS THROUGH WHICH STANDS OF THIS TYPE COULD BE REMOVED IN ORDER TO INCREASE AVAILABLE FOOD SUPPLIES IN AN EFFORT TO INCREASE THE OVERALL NUMBERS IN GIVEN POPULATIONS. UP UNTIL THIS POINT IN TIME, TIMBERING OPERATIONS HAVE SUPPLIED THE BASIC PROCEDURE FOR ATTAINING THESE GOALS. HOWEVER, SUCH OPERATIONS REQUIRE THE CONSTRUCTION OF NUMEROUS ROAD SYSTEMS WHICH ULTIMATELY INCREASES PUBLIC USE ON AN ANNUAL BASIS, WHICH IN TURN TENDS TO FORCE ANIMALS AWAY FROM THEM. BURNING, ON THE OTHER HAND, IS BY FAR PREFERABLE BECAUSE IT REQUIRES LESS OF A COMPLICATED ROAD SYSTEM WHICH ALLOWS PUBLIC ACCESS INTO HEAVILY USED BIG GAME AREAS. HOWEVER, THE CONTROL OF THESE BURNS IN CONJUNCTION WITH THE APPROPRIATE SIZE OF THE AREA TO BE BURNED IN RELATIONSHIP TO THE SIZE OF THE AREAS TO REMAIN FOR COVER AND PRODUCTION PURPOSES IS STILL QUESTIONABLE IN THE MINDS OF MOST GAME MANAGERS. IN ADDITION TO THIS FACT, IT IS WELL KNOWN THAT FAST BURNING CANOPY TYPE FIRES WHICH TEND TO REMOVE OVERSTORY WITHOUT BEING MATERIALLY DETRIMENTAL TO UNDERSTORY SPECIES SUCH AS BROWSE, GRASS AND FORBS IS BY FAR MORE BENEFICIAL AND PRODUCES FASTER RESULTS FOR GAME FOOD THAN DOES A SLOW BURNING FIRE WHICH TENDS TO DENUDE THE AREA COMPLETELY. THEREFORE, THE FOLLOWING QUESTIONS ARISE FROM THE STANDPOINT OF GOOD GAME MANAGEMENT: 1) WHAT PROPORTION OF A SLIGHT STAND OF CONIFEROUS FOREST SHOULD BE REMOVED? 2) SHOULD THE REMOVAL SECTIONS BE DONE ON A BLOCK BASIS OR A RANDOM PATTERN WITH IRREGULAR EDGE EFFECTS? 3) WHAT WIND VELOCITY IS NECESSARY TO PRODUCE A CANOPY BURN WITH THE LEAST POSSIBLE EFFECT ON THE

EXISTING UNDERSTORY SPECIES? WILDLIFE,GAME ANIMAL,SHRUB UNDERSTORY,HERBAGE UNDERSTORY,MANIPULATION COMPARISON,AREA SIZE,CROWN BURN,FIRE EFFECTS,HUMAN ECOLOGY

628. 10 691 AS A FIRE MANAGER, I AM INTERESTED IN THE EXTENT OF DAMAGE DONE TO A STREAM DUE TO FIRE EFFECTS, I.E. SILTATION, EROSION, ETC., SPECIFICALLY IN REGARD TO LOSS OF FISH AND FISH FOOD PRODUCTION. IT WOULD BE OF INTEREST TO KNOW HOW RAPIDLY A STREAM CAN REPAIR ANY DAMAGE DONE AFTER A FIRE. FISH,FIRE EFFECTS,STREAM,TIMING,SOIL EROSION,STABILITY

629. 10 732 DOES FIRE IN OAK BRUSH (GAMBEL OAK) INCREASE SPROUTING MORE THAN MECHANICAL METHODS OF ELIMINATION? DECIDUOUS FOREST,REPRODUCTION,FIRE EFFECTS,MANIPULATION COMPARISON,HUMAN DISTURBANCE

630. 10 732 HAVE WE CREATED A "LARGE FIRE SITUATION" IN OUR MATURE TIMBER STANDS BY EXCLUDING GROUND FIRES? SHOULD WE BE BROADCAST BURNING TO ELIMINATE SOME GROUND COVER? IS THIS PRACTICAL ANYMORE WITH THE INCREASE IN PRIVATE DEVELOPMENTS (HOME SITES) IN AND ADJACENT TO THE FOREST? HUMAN ECOLOGY,FIRE EXCLUSION,FLAMMABILITY,PRESCRIBED FIRE,FUEL REDUCTION

631. 10 733 HOW CAN WE DETERMINE INTERIOR STEM DAMAGE CAUSED BY HIGH VELOCITY INTENSE FIRE IN LODGEPOLE PINE? OFTEN, THE OUTSIDE STEMS SHOW LITTLE EFFECT, HOWEVER, INTERIOR CELL STRUCTURE IS DAMAGED RESULTING IN BADLY SPLIT STEMS AFTER SEVERAL WEEKS. WE NEED SOME WAY TO MEASURE THIS DAMAGE. STEM,ORGAN,FIRE EFFECTS,EXPERIMENT ORIENTED QUESTION,CONIFEROUS FOREST,FIRE INTENSITY,FIRE BEHAVIOR

632. 10 733 WHAT EFFECT DOES FIRE ASH HAVE ON THE FISH SPAWNING SITES? FISH,ASH,REPRODUCTION,STREAM

633. 10 733 WHEN IS THE PRIME TIME TO REHABILITATE BURNED OVER TIMBER SITES IN COLORADO AS TO THE AVAILIBILITY OF MINERALS, MOISTURE FOR THE SEEDLINGS, A) SOON AFTER FIRE, OR B) IN THE SPRING AFTER WINTER MOISTURE? SOIL,NUTRIENTS,PLANTING,TIMING

634. 10 751 FIRST, LET ME SAY THAT I AGREE WITH THE STATEMENT IN YOUR LETTER REGARDING FORESTRY RESEARCH BEING TOO FAR REMOVED FROM THE NEEDS OF THE MAN ON THE GROUND. I AM NOT AT ALL CERTAIN THAT YOUR PROJECT MIGHT NOT PRODUCE SIMILAR RESULTS. ADDITIONAL KNOWLEDGE OF THE ECOLOGICAL EFFECTS OF FIRE IS ALWAYS OF GENERAL INTEREST. HOWEVER, THE APPLICATION OF SUCH KNOWLEDGE IS AN ENTIRELY DIFFERENT MATTER INSOFAR AS THE MAJORITY OF LAND MANAGERS IS CONCERNED. IN ANY EVENT THE EXCLUSION OF FIRE, FIRE USE, OR THE DEGREE OF LET-BURN MANAGEMENT NOW IN VOGUE IS NOT NECESSARILY BASED ON THE EFFECTS OF FIRE BURN BUT OTHER PRESSURES CONTINUALLY FACED BY THE LAND MANAGER. FUNDING, PERSONNEL, PUBLIC ATTITUDES, GOVERNMENTAL POLICIES AND REGULATIONS, ETC. WITHOUT COMPLETE, RIGID CONTROL OF A PARTICULAR LAND BASE THE MANAGER HAS A VERY LIMITED CAPABILITY OF UTILIZING

RESEARCH RESULTS REGARDLESS OF THEIR VALIDITY AND DESIRABLIITY. VALUE JUDGEMENT,HUMAN ECOLOGY,FIRE EXCLUSION,FIRE EFFECTS

635. 11 059 DOES FIRE PROMOTE THE ESTABLISHMENT OF HYDROPHOBIC SOILS? IF SO, IN WHAT MANNER AND TO WHAT DEGREE? EXPERIMENT ORIENTED QUESTION,SOIL-WATER RELATIONS

636. 11 059 WHAT EFFECTS DO DIFFERENT SILVICULTURAL PRACTICES (TIMBER HARVESTING TECHNIQUES) HAVE ON FUEL LOADINGS? MANIPULATION COMPARISON,FUEL/BIOMASS ACCUMULATION

637. 11 066 WHAT MIGHT BE THE EFFECT OF CHANGING THE DENSITY OF DEAD, STANDING SNAGS AS SEEN IN THE FIRE FREQUENCY FOR THE AREA, AND POPULATION DENSITIES OF INSECT PESTS, BEE POLLINATORS, INSECTIVOROUS AND CARNIVOROUS BIRDS? SNAG,INSECT,BIRD

638. 11 196 HOW DOES FIRE OF DIFFERENT INTENSITIES, ON A GIVEN SITE, AFFECT THE PROBABILITY OF RECURRENCE OF FIRES IN LATER YEARS? FIRE INTENSITY,FIRE FREQUENCY

639. 11 196 HOW DOES THE HYDROLOGIC REGIME OF A WATERSHED CHANGE AFTER FIRES OF DIFFERENT INTENSITIES SUCH AS GROUND FIRE OR CROWN FIRE? SPECIFICALLY, HOW DOES FIRE AFFECT RUNOFF, OVERLAND FLOW, INFILTRATION RATES, AND INTERFLOW? ONCE THESE EFFECTS OCCUR, HOW LONG DO THEY REMAIN ON A BURNED WATERSHED? WATERSHED,HYDROLOGY,FIRE INTENSITY,TIMING

640. 11 196 WHAT CHANGES ARE MADE IN DRY WEIGHT OF STANDING LIVE, STANDING DEAD, AND DOWN FUELS FOLLOWING FIRES OF DIFFERENT INTENSITIES? FIRE BEHAVIOR,FUEL REDUCTION

641. 11 196 WHAT DOES THE EFFECT OF FIRE MANAGEMENT ATTITUDE (SUCH AS LETTING FIRES OF LOW INTENSITY BURN OUT UNDER FAVORABLE CONDITIONS VERSUS PUTTING OUT ALL FIRES) HAVE ON NATIONAL FOREST BUDGETS WITH REGARD TO MAINTAINING OR REDUCING INITIAL ATTACK FORCES, EQUIPMENT, AND PRESUPPRESSION COSTS? HOW DO VARIOUS CUTTING PRACTICES AFFECT THESE COSTS? GENERAL FIRE MANAGEMENT,ECONOMIC EFFECTS

642. 11 196 WHAT EFFECT DO VARIOUS METHODS OF HARVEST SUCH AS CLEARCUT, THINNING, STRIPCUTTING, ETC., HAVE ON FIRE IGNITION, RATE OF SPREAD, AND CONTROLABILITY? WHAT EFFECTS DO CUTTING PRACTICES HAVE ON DRY WEIGHT OF LIVE, DEAD, AND DOWN FUELS? MANIPULATION COMPARISON,FIRE BEHAVIOR, FUEL/BIOMASS ACCUMULATION

643. 11 196 WHAT IS THE DETERIORATION RATE OF FUELS FOLLOWING FIRES OF VARIOUS INTENSITIES, AND HOW DOES THIS COMPARE WITH LOGGING SLASH FOLLOWING PILING AND BURNING, OR COMPARED WITH THE DETERIORATION RATE OF SLASH WHICH HAS BEEN CHOPPED AND SCATTERED? DECOMPOSITION,FIRE INTENSITY,MANIPULATION COMPARISON

644. 11 200 ON SITES WHERE ARIZONA FESCUE BECOMES ESTABLISHED, PONDEROSA PINE IS EXCLUDED. IS THIS A PERMANENT

CONDITION? WILL THE FESCUE DISAPPEAR AFTER A LENGTH OF TIME, OR IS IT NECESSARY FOR FIRE TO PREPARE THE SITE BEFORE THE PINE CAN RE-ESTABLISH ITSELF? IN THE PINUS PONDEROSA-FESTUCA ARIZONICA ASSOCIATION IN THE SOUTHWEST, WHICH IS THE CLIMAX SPECIES? COMPETITION,VEGETATION,SUCCESSION

645. 11 201 UNDER WHAT CONDITIONS DO ASPEN STANDS BURN HOT ENOUGH THAT THE STEMS ARE KILLED? THIS WILL VARY, OF COURSE, WITH THE NATURE OF THE SUBORDINATED VEGETATION. DECIDUOUS FOREST,FIRE INTENSITY,HEAT EFFECTS,STEM,MORTALITY

646. 11 201 WHAT IS THE AREAL DISTRIBUTION OF FIRE-INDUCED SOIL-WATER REPELLENCY FOLLOWING LIGHT SURFACE FIRES? SEVERE FIRES? IN DIFFERENT SOILS, HABITAT TYPES, AND STAND TYPES? WHAT ARE THE FACTORS THAT DISRUPT AND BREAK DOWN WATER REPELLENT LAYERS? HOW LONG ARE SUCH LAYERS EFFECTIVE? SOIL-WATER RELATIONS,FIRE INTENSITY

647. 11 288 WHAT IS THE FREQUENCY OF LIGHTNING STRIKES AMONG DEAD TREES OR SNAGS, AND WHAT ARE THE CONSEQUENCES OF SUCH STRIKES? ARE RIDGE TOP TREES MORE STRIKE PRONE THAN TREES ON SLOPES? DOES THE ELIMINATION OF DEAD TREES DURING TIMBER HARVESTS SIGNIFICANTLY REDUCE THE NUMBER OF LIGHTNING FIRES? SNAG,FIRE FREQUENCY,LIGHTNING-CAUSED FIRE

648. 11 288 WOULD RODENT CONTROL AFTER SOME FIRES INCREASE CHANCES OF REFORESTATION BY SPROUTING OR BY THE FEW VIABLE SEEDS AVAILABLE ON THE GROUND AND FROM TREES NOT KILLED BY THE FIRE? SMALL MAMMAL,REPRODUCTION,SEED,HERBIVORY

649. 11 289 WHAT IS THE EFFECT OF CHANGING THE FIRE FREQUENCY AND INTENSITY AS SEEN IN UNDERSTORY VEGETAL PRODUCTIVITY IN PONDEROSA PINE OF NORTHERN NEW MEXICO? FIRE FREQUENCY,FIRE INTENSITY,SHRUB UNDERSTORY,PRODUCTIVITY,SUCCESSION

650. 11 307 IS THERE A RELATIONSHIP BETWEEN FIRE EXCLUSION AND THE POPULATION DYNAMICS OF THE SPRUCE BARK BEETLE? INSECT,FIRE EXCLUSION

651. 11 307 WHAT ARE THE EFFECTS OF FUEL CONSUMPTION BY FIRE ON THE POPULATIONS OF THE SOIL MICROBIOTA? ARE THERE SIGNIFICANT CHANGES IN THEIR PRODUCTIVITY? TAXA OF INTEREST TO ME ARE THE ACTINOMYCETES, ASCOMYCETES, NITROBACTER, NITROSOMONAS, VIBRIO, PSEUDOMONAS AND THE ORIBATID MITES. FUEL REDUCTION,MICROORGANISM,SOIL

652. 11 307 WHAT ARE THE EFFECTS OF PRESCRIBED BURNING ON THE NET PRODUCTIVITY OF COMMON WESTERN TREES? HOW WELL ARE THESE CHANGES REFLECTED BY TREE-RING INCREMENTS? PRESCRIBED FIRE, PRODUCTIVITY,VEGETATION,STEM

653. 11 307 WHAT ARE THE EFFECTS OF PRESCRIBED FIRE ON THE CYCLING RATES FOR POTASSIUM, NITROGEN AND PHOSPHOROUS? HOW DO THESE RATES CHANGE WITH TIME? NUTRIENTS,PRESCRIBED FIRE

654. 11 307 WHAT ARE THE EFFECTS OF VARIOUS ENERGY-RELEASE RATES ON ARCEUTHOBIUM POPULATIONS IN PONDEROSA PINE? EPIPHYTE,FIRE INTENSITY

655. 11 307 WHAT IS THE RELATIONSHIP BETWEEN ENERGY-RELEASE RATES AND DIAMETERS OF KILLED TREES, FOR COMMON SPECIES OF WESTERN TREES? SIZE CLASS,MORTALITY,FIRE INTENSITY

656. 11 544 CAN LIGHTNING BE CONTROLLED BY SETTING UP SOME TYPE OF LIGHTNING ARRESTER OR OTHER METHOD, AND IF SO, COULD IT BE OPERATED ONLY DURING TIMES THAT FIRES WILL CAUSE DAMAGE? LIGHTNING EFFECTS,LIGHTNING-CAUSED FIRE

657. 11 544 IF ALL SNAGS ARE REMOVED FROM AN AREA IN THE SOUTHWESTERN U.S., WHAT WILL BE THE EFFECT ON THE BIRD-INSECT RELATIONSHIP? BIRD,SNAG,INSECT,HUMAN DISTURBANCE

658. 11 544 WHAT EFFECT DOES A FIRE HAVE ON THE AREA OUTSIDE THE FIRE AND HOW FAR DOES THE EFFECT REACH? FIRE EFFECTS,ECOTONE,AREA SIZE

659. 11 545 DOES INITIAL AND REPEATED BROADCAST BURNING REDUCE THE FOOD SUPPLY OF THE ABERT SQUIRREL? SMALL MAMMAL,FIRE EFFECTS,POPULATION,FIRE FREQUENCY,PRESCRIBED FIRE

660. 11 545 DOES PERIODIC BROADCAST BURNING AID NATURAL SEED GERMINATION AND SEEDLING ESTABLISHMENT? WHAT IS THE TIME FACTOR IN RELATION TO SEED CAST?
TIMING,PRESCRIBED
FIRE,SEED,REPRODUCTION,DISPERSION,GROUND FIRE

661. 11 545 UNDER WHAT CONDITIONS CAN FIRE BE USED AS A MANAGEMENT TOOL TO REDUCE COMBUSTIBLE FUELS, WITHOUT DESTROYING THE TREE RESOURCE, IN A FOREST TYPE (PONDEROSA PINE WITH A WOODY UNDERSTORY) WHERE FUELS HAVE BUILT UP OVER THE PAST 50 YEARS AND THERE IS A DIFFERENTIAL IN TREE SIZE, AGE, AND DISTRIBUTION?
PRESCRIBED FIRE,FUEL REDUCTION,SHRUB
UNDERSTORY,FUEL/BIOMASS ACCUMULATION,CONIFEROUS FOREST

662. 11 545 WHAT ARE THE CHANGES IN THE MICROCLIMATE FOLLOWING A GROUND BROADCAST BURN? MICROCLIMATE,GROUND FIRE,FIRE EFFECTS

663. 11 545 WHAT EFFECT DOES PERIODIC BURNING HAVE IN THE NUTRIENT RECYCLING PROCESS? WHAT IS THE PERCENT RECOVERY OF NUTRIENTS BY PLANT GROWTH AFTER BURNING? IS THE TREE GROWTH RATE INCREASED DUE TO A GREATER ABUNDANCE OF NUTRIENTS AFTER BURNING? FIRE EFFECTS,NUTRIENTS,FIRE FREQUENCY,PRODUCTIVITY,POPULATION GROWTH

664. 11 545 WHAT IS THE FREQUENCY OF BURNING NEEDED TO CONTROL COMPETITIVE PLANT SPECIES SUCH AS TURBINELLA OAK, MANZANITA, AND ALLIGATOR JUNIPER? FIRE FREQUENCY,PRESCRIBED FIRE,SHRUB UNDERSTORY,CONIFEROUS FOREST,COMPETITION

665. 11 545 WHAT IS THE OPTIMUM AREA TO BURN IN RELATION TO MULE DEER HABITAT? WHAT ARE THE EFFECTS OF BURNING ON MULE DEER POPULATIONS IN RELATION TO HABITAT CONDITIONS AFTER INITIAL AND REPEATED BURNING? AREA SIZE,GAME ANIMAL,FIRE EFFECTS,FIRE FREQUENCY,PRESCRIBED FIRE

666. 11 545 WILL A PONDEROSA PINE SEEDLING MORE LIKELY SUCCUMB TO MOISTURE STRESS IN A BURNED AREA VERSUS AN UNBURNED AREA? MORTALITY,SOIL-WATER RELATIONS,CONIFEROUS FOREST

667. 11 546 FUEL BREAKS ARE BEING UTILIZED CONSIDERABLY IN THE SOUTHWEST IN PREATTACK PLANNING. WE AS YET DO NOT HAVE GOOD INFORMATION ON HOW MUCH VALUE FUELBREAKS WOULD HAVE, WHAT WIDTHS ARE BEST ETC., IN SOUTHWESTERN PONDEROSA PINE. FIRE EXCLUSION,GENERAL FIRE MANAGEMENT,HUMAN DISTURBANCE

668. 11 546 HOW MUCH ASH OR CARBON CONTACT CAN A TROUT FISHERY WITHSTAND WITHOUT SUBSTANTIAL LOSS OF FISH? FISH,STREAM,FIRE EFFECTS,CHARCOAL

669. 11 546 LOSS OF TREES THROUGH SCORCHING AND EXCESSIVE HEAT AT THE BOLE IS A PROBLEM IN ALL TYPES OF PRESCRIBED BURNING IN THE SOUTHWEST. HOW CAN WE MINIMIZE THIS? WHAT MAXIMUM BOLE TEMPERATURES CAN BE TOLERATED? HOW MUCH LIVE CROWN CAN WE LOSE AND STILL SAVE THE TREE? CROWN,CROWN BURN,MORTALITY,CONIFEROUS FOREST,STEM,ORGAN,PRESCRIBED FIRE,HEAT EFFECTS,FIRE INTENSITY

670. 11 546 WHAT INTENSITY OF FIRE IS REQUIRED FOR SERIOUS DAMAGE TO SOIL MICROORGANISMS AND BACTERIA? FIRE INTENSITY,SOIL,MICROORGANISM

671. 11 547 BLACKENED GROUND ABSORBS SOLAR HEAT FASTER AND DEEPER THAN NATURALLY COLORED SURFACES. WARMTH CAUSES EARLIER SPRING GROWTH. WHAT IS THE AFFECT OF FROST, SNOW, SPRING WINDS, ETC. ON SUCCULENT GROWTH FOR AN EARLIER START ON BURNED LAND AS COMPARED TO GRASS THAT GREENS UP NATURALLY A MONTH LATER ON UNBURNED SOIL? ARE THERE ANY COMPARISONS OF THIS FOR A LONG ENOUGH TIME TO HAVE AVERAGE TYPE WEATHER OR SPRING DATA? FIRE EFFECTS,SNOW,MICROCLIMATE,CHARCOAL,ASH,PRODUCTIVITY,REPR ODUCTION

672. 11 547 COULD THERE BE A LATENT SIDE EFFECT TO PRESCRIBED BURNING IN SPRING OR FALL INSTEAD OF DURING THE TIME MOTHER NATURE DOES HER IGNITING? I MEAN IS THERE A POSSIBLE ECOLOGICAL FACTOR WE AREN'T CONSIDERING WHEN WE BURN IN THE FALL TO REDUCE FIRE HAZARD, BUT DURING A SEASON WHEN WE ARE CONFIDENT WE CAN CONTROL OUR FIRE? FIRE EFFECTS,PRESCRIBED FIRE,LIGHTNING-CAUSED FIRE,PRESCRIBED FIRE,TIMING,ECOSYSTEM

673. 11 547 WITHIN ANY GIVEN AREA WHERE FIRE IS EXCLUDED, IS THERE A MAXIMUM DEPTH TO WHICH NATURAL DEBRIS (FALLING NEEDLES, LEAVES, TREES THEMSELVES, ETC.) BUILDS? OR DOES THE HUMUS SIMPLY KEEP GETTING DEEPER AND DEEPER? IN OTHER WORDS IS THERE A CERTAIN POINT TO WHICH SOIL AND HUMUS REACH A STABLE POINT? FUEL/BIOMASS

ACCUMULATION,FIRE EXCLUSION,SOIL,DUFF

674. 11 548 HAVE ANY STUDIES BEEN COMPLETED ON THE EFFECTS OF CONTROLLED BURNING ON GAME POPULATIONS, PARTICULARLY NESTING BIRDS AND SMALL MAMMALS? SMALL MAMMAL,BIRD,PRESCRIBED FIRE,FIRE EFFECTS

675. 11 552 ARIZONA CYPRESS (CUPRESSUS ARIZONICA) GROWS IN PURE STANDS IN ISOLATED POCKETS IN VARIOUS PORTIONS OF THE SYCAMORE CANYON WILDERNESS AREA. WHAT OCCURRENCE OR ABSENCE OF FIRE CONTRIBUTES TO THIS UNIQUE GROWTH PATTERN? FIRE EFFECTS,FIRE EXCLUSION,POPULATION,CONIFEROUS FOREST

676. 11 552 DOG-HAIR THICKETS OF SECOND GROWTH PONDEROSA PINE ARE A COMMON OCCURRENCE BELOW THE MOGOLLON RIM IN ARIZONA. DUE TO THE LIMITED TIMBER RESOURCE, THINNING AND WEEDING CAN ONLY BE APPLIED IN A VERY LIMITED FASHION. CAN, AND WILL, FIRE SOMEDAY BE SUBSTITUTED, UNDER PRESCRIPTION, AS A CULTURAL PRACTICE? PRESCRIBED FIRE,COMPETITION,DENSITY,CONIFEROUS FOREST

677. 11 552 THE PRACTICE OF IMMEDIATELY SEEDING A MAJOR FIRE TO GRASSES MAY INHIBIT FUTURE EFFORTS AT NATURAL AND ARTIFICIAL REGENERATION OF PONDEROSA PINE. CAN FIRE BE USED AS A TOOL FOR SITE PREPARATION TO REDUCE COMPETITION FROM GRASS AND GRASS-LIKE VEGETATION UNDER THE HARSH CONDITIONS OCCURRING BELOW THE MOGOLLON RIM IN ARIZONA? GRASSLAND,FIRE EFFECTS,REPRODUCTION,COMPETITION,CONIFEROUS FOREST,PRESCRIBED FIRE

678. 11 553 DOES CHARRED FUEL AFFORD RESISTANCE TO IGNITION? IN OTHER WORDS WILL A COOL FIRE THROUGH, SAY THINNING SLASH, REDUCE THE HAZARD? FIRE EFFECTS,CHARCOAL,FLAMMABILITY,FIRE INTENSITY

679. 11 819 WHAT IS THE PROBABILITY OF A FIRE STARTING WHEN LIGHTNING STRIKES A DEAD STANDING TREE AND THE PROBABILITY OF A FIRE STARTING WHEN LIGHTNING STRIKES A GREEN LIVE TREE? LIGHTNING EFFECTS,LIGHTNING-CAUSED FIRE,FIRE FREQUENCY,SNAG,CONIFEROUS FOREST

680. 11 819 WHAT IS THE PROBABILITY OF LIGHTNING STRIKING A DEAD STANDING TREE AS OPPOSED TO A LIVE TREE? LIGHTNING EFFECTS,SNAG,CONIFEROUS FOREST

681. 11 819 WHAT ORGANISMS INHABIT DEAD TREES AND ARE THE DEAD TREES AN ESSENTIAL PORTION OF THEIR LIFE CYCLE? IF SO, WHAT ARE THE BENEFICAL AND DETRIMENTAL EFFECTS OF THESE ORGANISMS TO MANKIND? IS IT MORE IMPORTANT TO LEAVE THESE DEAD TREES STANDING FOR ORGANISMS, ANIMALS AND BIRDS OR TO DROP AND REMOVE THEM AND REDUCE A LIGHTNING/FIRE HAZARD? SNAG,FIRE FREQUENCY,ANIMALS,VALUE JUDGEMENT,ECOSYSTEM

682. 12 564 ARE THERE LONG-TERM ENVIRONMENTAL EFFECTS OF LARGE FIRES, SUCH THAT THE ECOSYSTEM IS IRREPARABLY DAMAGED? OR ARE THE ADVERSE EFFECTS SHORT-TERM, AND MAY THEY BE

NEGATED IN THE LONG RUN THROUGH PRODUCTION OF INCREASED BIOMASS? FIRE INTENSITY,AREA SIZE,SUCCESSION,FUEL/BIOMASS ACCUMULATION

683. 12 564 DO AGGRESSIVE FIRE CONTROL PROCEDURES ENHANCE THE POSSIBILITY OF DISASTROUS FIRES DUE TO TREMENDOUS FUEL BUILD-UPS. FIRE EXCLUSION,FIRE BEHAVIOR,FUEL/BIOMASS ACCUMULATION,PRODUCTIVITY,SUCCESSION

684. 12 564 WHAT ARE THE LONG RANGE EFFECTS OF SMALL OPEN PARKS BEING ALLOWED TO RESEED WITH SPRUCE, FIR AND PINE, ON WILDLIFE SPECIES (ELK, DEER, BEAR, ETC.)? FIRE EXCLUSION,ANIMALS,SUCCESSION,VEGETATION,AREA SIZE

685. 12 567 WHAT ECOLOGIC CHANGES HAVE RESULTED IN THE PONDEROSA PINE TYPE IN NEW MEXICO THROUGH THE EXCLUSION OF FIRE? COMMENT- IN MANY AREAS OF THE SOUTHWEST, WE FIND LARGE AREAS OF "DOG-HAIR" THICKETS WHICH HAVE GROWN UP IN THE LAST 20-60 YEARS. PRESENTLY, THEY ARE BIOLOGICAL DESERTS AND CERTAINLY FIRES, IF ALLOWED TO BURN IN THE PAST, WOULD HAVE CHANGED THIS SITUATION. MANAGEMENT ACTIVITIES SUCH AS THINNING, LOGGING, ETC., CAN REPLACE FIRE TO SOME EXTENT IN THE REMOVAL OF TREES. HOWEVER, WE ARE STILL LEFT WITH A BUILD-UP OF DUFF WHICH APPEARS TO BE A BARRIER TO THE PENETRATION OF WATER INTO THE SOIL AND TO THE ESTABLISHMENT OF OTHER PLANTS (GRASS, FORBS, BROWSE, ETC.). FIRE EXCLUSION,CONIFEROUS FOREST,HERBAGE UNDERSTORY,SOIL-WATER RELATIONS,LITTER,DUFF

686. 12 568 DOES PROPERLY APPLIED PRESCRIBED BROADCAST BURNING HAVE A SIGNIFICANT EFFECT ON THE GROWTH RATE OF LIVE TREES AS OPPOSED TO THE GROWTH RATE WHERE SLASH DISPOSAL IS ACCOMPLISHED BY ALTERNATE METHODS? I WOULD LIKE TO SEE MORE RESEARCH INTO THE RELATIONSHIPS BETWEEN CAMBIUM TEMPERATURE, DURATION OF HEAT, TREE SPECIES, SIZE, BARK THICKNESS, ETC. AS THESE RELATE TO KILLING OF TREES IN SURFACE FIRES. PRESCRIBED FIRE,POPULATION GROWTH,MANIPULATION COMPARISON,ORGAN,HEAT EFFECTS,STEM,MORTALITY,CONIFEROUS FOREST,FIRE EFFECTS

687. 12 569 HOW WOULD BE THE BEST WAY TO PLACE A SOUTHWESTERN NEW MEXICO WILDERNESS AREA BACK INTO ITS NATURAL STATE AND HOW LONG WOULD BE REQUIRED TO DO SO, STRICTLY FROM A NATURAL FIRE STANDPOINT? ARE HOT, JUNE FIRES NECESSARY IN A WILDERNESS AREA TO PERPETUATE NATURAL CONDITIONS OR COULD COOLER, LATE SEASON FIRES DO THE REQUIRED JOB? ARE HOT, JUNE FIRES TRULY DISASTEROUS IN A WILDERNESS AREA OR DO THEY BRING ABOUT CHANGES AND/OR ALTERATIONS WHICH ARE DEEMED DESIRABLE IN WILDERNESS AREAS? VALUE JUDGEMENT,FIRE EXCLUSION,FIRE EFFECTS,TIMING,FIRE INTENSITY

688. 12 570 HOW MANY TONS/ACRE OF FUEL ARE REQUIRED TO SUPPORT A CROWN FIRE IN PONDEROSA PINE AND IN MIXED CONIFER FOREST IN THE SOUTHWEST? FUEL/BIOMASS ACCUMULATION,CROWN BURN,CONIFEROUS FOREST,FIRE BEHAVIOR

689. 12 570 WILL LOGGING, AS IS NOW PRACTICED IN THE SOUTHWEST, DO THE SAME JOB AS FIRE ONCE DID IN KEEPING

PONDEROSA PINE GROWING IN RELATIVELY PURE STANDS, OR WILL FIR SPECIES AND DOUGLAS-FIR COME IN AND FORCE OUT THE PINE OR ESTABLISH A MIXED STAND? SUCCESSION,FIRE EXCLUSION,HUMAN DISTURBANCE,MANIPULATION COMPARISON,ECOSYSTEM,COMPETITION,SPECIES DIVERSITY

690. 12 572 WHAT IS EFFECT OF TIMING OF UNDERSTORY PRESCRIBED FIRE (GROWING SEASON VS. OTHER SEASON) ON POLE-SIZED SOUTHWESTERN PONDEROSA PINE, AS OBSERVED IN: RESISTANCE TO FIRE EFFECTS, RESISTANCE TO INSECT ATTACK, GROWTH RATE? FIRE EFFECTS,CONIFEROUS FOREST,POPULATION,INSECT,STEM,POPULATION GROWTH,PRESCRIBED FIRE,GROUND FIRE

691. 12 610 BECAUSE FIRE DANGER IS LOW IN MOST SPRUCE-FIR FORESTS IN NEW MEXICO, MY QUESTION IS: IS MORE DAMAGE DONE BY BURNING SPRUCE-FIR FOREST TYPES FOR SLASH REDUCTION FOLLOWING LOGGING THAN LEAVING THESE FOREST TYPES AS UNDISTURBED AS POSSIBLE? THE BEST REPRODUCTION I KNOW OF IN THE SOUTHERN ROCKY MOUNTAINS IS ON UNDISTURBED SLASH AREAS. SPRUCE-FIR AREAS THAT HAVE BEEN BURNT IN THIS AREA HAVE LITTLE OR NO REPRODUCTION ON THEM AND REMAIN UNPRODUCTIVE. THE SPRUCE-FIR SITE HAS BEEN DESTROYED BY BURNING. THE CURE FOR SLASH HAS BEEN MUCH WORSE THAN THE SLASH. FIRE EFFECTS,SOIL,PRESCRIBED FIRE,FUEL REDUCTION,REPRODUCTION,CONIFEROUS FOREST,PRODUCTIVITY

692. 12 703 CAN CONTROLLED BURNING BE USED TO CONTROL VARIOUS INSECT INFESTATIONS IN FOREST ECOSYSTEMS? INSECT,FIRE EFFECTS,PRESCRIBED FIRE

693. 12 703 IN AREAS THAT HAVE A LONG HISTORY OF PROTECTION FROM BURNING AND WHERE A LARGE AMOUNT OF BURNABLE MATERIAL HAS BUILT UP ON THE FOREST FLOOR, CAN A CONTROLLED BURN BE CONDUCTED WITHOUT EXCESSIVE HEAT HARMING THE TOP SOIL LAYER? PRESCRIBED FIRE,FIRE EXCLUSION,SOIL,HEAT EFFECTS,FUEL/BIOMASS ACCUMULATION

694. 12 703 IN USING CONTROLLED BURNING FOR CREATION OF BIG GAME HABITAT, WHAT SIZE BURN IS OPTIMAL FOR MAXIMUM UTILIZATION AND HOW MUCH OF A BELT SHOULD BE LEFT BETWEEN BURNS? AREA SIZE,GAME ANIMAL,PRESCRIBED FIRE,ECOTONE

695. 12 703 TO CARRY THE IDEA OF WILDERNESS AREAS TO ITS FULLEST MEANING, SHOULDN'T FOREST FIRES BE ALLOWED TO BURN IN WILDERNESS AREAS WHERE NO HARM CAN COME TO PEOPLE OR PROPERTY? VALUE JUDGEMENT,FIRE EXCLUSION,FIRE EFFECTS

696. 12 735 FIRES THAT ARE NOT DANGEROUS AND COULD BE LEFT TO BURN OUT MUST STILL BE MANNED BECAUSE OF PUBLIC OPINION. THE EXPENSE OF MANNING THESE FIRES CAN BE OUT OF PROPORTION TO THE VALUE OF THE RESOURCE. HOW DO WE EDUCATE THE PUBLIC ON FIRES AS A NATURAL OCCURRENCE? FIRE EXCLUSION,ECONOMIC EFFECTS,VALUE JUDGEMENT,PUBLIC REACTION

697. 12 736 AT WHAT POINT DOES THE SOIL BECOME DAMAGED WHEN BURNING SLASH? HOW DOES ONE DETERMINE THAT THE FIRE IS HOT ENOUGH TO GET COMPLETE COMBUSTION WITHOUT DAMAGING THE SITE? SOIL,HEAT EFFECTS,FUEL REDUCTION,FIRE EFFECTS

698. 12 736 WHAT ARE THE MAXIMUM TEMPERATURES OR FUEL CONDITIONS THAT PONDEROSA PINE CAN WITHSTAND IN THE VARIOUS SIZE CLASSES? SIZE CLASS,HEAT EFFECTS,FIRE INTENSITY,CONIFEROUS FOREST

699. 12 736 WHAT STAND OR CROWN DENSITY IS REQUIRED TO CARRY A FIRE IN STANDING PINON-JUNIPER STANDS? CROWN BURN,CROWN,FLAMMABILITY,FIRE BEHAVIOR

700. 12 755 COULD THE SOIL BE TREATED EITHER PHYSICALLY OR CHEMICALLY TO ENHANCE SEED GERMINATION AND SURVIVAL? SOIL,NUTRIENTS,SEED

701. 13 055 DOES FIRE PRODUCE NITROGEN DEFICIENT CONDITIONS IN PLANT SPECIES REVEGETATING BURNED SURFACES? IS PRIMARY PRODUCTIVITY DEPRESSED OR STIMULATED BY FIRE? HOW EXTENSIVELY IS THE RATE OF NITROGEN CYCLING ALTERED FOLLOWING FIRE? A) MORE DETAILED EXAMINATION OF EXTENT TO WHICH NITROGEN TRANSFORMATION PROCESSES ARE ALTERED. NUTRIENTS

702. 13 055 TO WHAT EXTENT DOES FIRE ALTER RATES OF DECOMPOSITION OF ORGANIC DEBRIS DEPOSITED ON AND IN THE SOIL PROFILE? A) ASSOCIATED EFFECTS ON MICROBIAL POPULATIONS, B) ASSOCIATED EFFECTS ON INVERTEBRATE ANIMAL POPULATIONS
DECOMPOSITION,MICROORGANISM,ARTHROPODS

703. 13 210 WHAT ARE THE EFFECTS OF FIRE ON SOIL MOISTURE FLUXES AND THE RELATIONSHIP BETWEEN THESE MOISTURE FLUXES AND PLANT DEVELOPMENT AND GROWTH? SOIL-WATER RELATIONS,VEGETATION,PRODUCTIVITY

704. 13 210 WHAT IS THE IMPACT OF FIRE EXCLUSION IN THE TAIGA ON THE EVOLUTION OF PLANTS AND ANIMALS ADAPTED TO PERIODIC BURNING? SPECIFIC EXAMPLES: THE SEMI-SEROTINOUS CONES OF BLACK SPRUCE (PICEA MARIANA). GENETIC RESPONSE,FIRE FREQUENCY,ORGAN,FIRE EXCLUSION

705. 13 210 WHAT IS THE ROLE OF FIRE IN THE MAINTENANCE OF THE TAIGA NUTRIENT BALANCE? NUTRIENTS

706. 13 211 WHAT ARE THE EFFECTS OF VARIOUS INTENSITIES OF BURNS ON THE PERMA-FROST REGIME? WHAT EFFECT, IF ANY, DO BURNS HAVE ON THE WATER RETENTION CAPACITY IN A GIVEN WATERSHED AREA? WHAT ARE THE CUMULATIVE EFFECTS OF SOIL EROSION AFTER FIRE? SOIL-WATER RELATIONS,SOIL EROSION

707. 13 212 HAS FIRE EXCLUSION IN CONIFEROUS FORESTS INCREASED SUSCEPTIBILITY OF DOUGLAS FIR TUSSOCK MOTH BY ALLOWING INCREASE IN THE TRUE FIR UNDERSTORY COMPONENT? FIRE EXCLUSION,COMMUNITY,INSECT,SHRUB UNDERSTORY,CONIFEROUS FOREST

708. 13 212 HAS SURFACE FIRE EXCLUSION IN CONIFEROUS FORESTS REDUCED POPULATIONS OF INSECTS, THAT PARASITIZE OTHER INSECTS, BY ALTERING THE SPECIES COMPOSITION OF FLOWERING AND FRUIT BEARING GROUND COVER IMPORTANT AS A FOOD SOURCE FOR ADULT PARASITOIDS, SUCH AS THE ICHNEUMONIDS? GROUND FIRE,FIRE EXCLUSION,POPULATION,INSECT,PREDATION,SPECIES DIVERSITY,HERBAGE UNDERSTORY

709. 13 212 HAS SURFACE FIRE EXCLUSION IN CONIFEROUS FORESTS RESULTED IN AN INCREASE IN POPULATIONS OF CONE FEEDING INSECTS SUCH AS CONOPHTHORUS AND OTHERS THAT SPEND A PORTION OF THEIR LIFE CYCLE IN THE LITTER? GROUND FIRE,FIRE EXCLUSION,POPULATION,INSECT,LITTER

710. 13 215 HOW LONG DOES IT TAKE FOR ROOTING SYSTEMS TO BE REVITALIZED FOLLOWING FIRE THUS NEGATING INITIAL EROSION ACCELERATION? ROOTS,PRODUCTIVITY,SOIL EROSION

711. 13 215 WHAT EFFECT DOES FIRE HAVE ON ACCELERATED SURFACE EROSION BY DRY CREEP AND RAVEL? IN THE HUMID CONIFEROUS FOREST AREAS OF THE WESTERN CASCADES AND COAST RANGES? IN THE SEMI-ARID REGIONS EAST OF THE CASCADES? WHAT EFFECT DOES FIRE HAVE ON MASS SOIL MOVEMENT? IS IT ACCELERATED IN TERMS OF NUMBER OF LANDSLIDES OR RATE OF CREEP DEFORMATION? WHAT ARE THESE INCREASES IN TERMS OF NUMBERS PER UNIT AREA OF RATES OF MOVEMENT? WHAT IS THE PRINCIPAL IMPACT OF FIRE ON SOIL EROSION? DESTRUCTION OF SURFACE COVER? DECAY OF ANCHORING AND BINDING ROOTS FOLLOWING DESTRUCTION OF SURFACE PLANT? DESSICATION? HYDROPHOBIC LAYER FORMATION? SOIL EROSION

712. 13 217 AT WHAT FREQUENCY CAN FIRES OCCUR IN ALASKAN FORESTS? WHAT ARE THE FACTORS GOVERNING FIRE FREQUENCY? FIRE FREQUENCY,FIRE BEHAVIOR,EXPERIMENT ORIENTED QUESTION

713. 13 217 CAN ASPEN, WILLOW (SALICACEAE, IN GENERAL) REPLACE BLACK SPRUCE ON FAVORABLE SITES? WHAT CONDITIONS ARE REQUIRED (E.G. FIRE INTENSITY, SEED SOURCE, SURFACE MOISTURE CONDITIONS)? COMPETITION,SUCCESSION

714. 13 217 CERTAIN SPECIES (E.G. CORYDALIS,GERANIUM) WHICH HAVE SEEDS THAT APPEAR IMMOBILE, FREQUENTLY OCCUR ABUNDANTLY FOLLOWING FIRE: WHEREAS, THEY WERE ABSENT IN THE UNBURNED FOREST. WHAT IS THE SEED SOURCE FOR THESE SPECIES; SEED STORED IN ORGANIC LAYERS OF SOIL, OR SEED TRANSPORTED BY SMALL MAMMALS? SEED

715. 13 217 HOW LONG IS THE REGENERATION PERIOD FOR INTERIOR ALASKA BLACK SPRUCE STANDS FOLLOWING FIRE? WHAT IS THE RELATIONSHIP TO FIRE INTENSITY? RELATIONSHIP TO SURFACE MOISTURE CONDITIONS? REPRODUCTION,SUCCESSION,FIRE INTENSITY,SOIL-WATER RELATIONS

716. 13 217 WHAT ARE THE BIOLOGICAL AND ABIOTIC SIMILARITIES AND DIFFERENCES BETWEEN FIRE AND DIFFERENT TYPES OF MAN-MADE DISTURBANCES? WHAT MAN-CAUSED DISTURBANCES CREATE CONDITIONS MOST SIMILAR TO THOSE CREATED BY FIRE,

AND CAN THESE DISTURBANCES BE USED TO REPLACE FIRE IN AREAS WHERE FIRE EXCLUSION MUST BE PRACTICED (RELATING PRIMARILY TO ALASKA)? MANIPULATION COMPARISON

717. 13 217 WHAT IS THE RELATIONSHIP OF WHITE SPRUCE TO FIRE IN INTERIOR ALASKA? HAS THIS FOREST TYPE INCREASED OR DECREASED AS A RESULT OF FIRE? EXPERIMENT ORIENTED QUESTION,PRODUCTIVITY

718. 13 294 IN A BURN, THERE ARE OFTEN PATCHES OF FOREST UNBURNED. THESE UNBURNED AREAS APPEAR TO OCCUR IN A RANDOM PATTERN WITHOUT REGARD TO SLOPE, ASPECT, SOIL OR MOISTURE DIFFERENCES. IS THERE A FACTOR IN THE ECOSYSTEM OF THE UNBURNED AREA THAT RESULTS IN ITS NOT BURNING WHEN "SIMILAR APPEARING" ADJACENT FOREST HAS BURNED? FIRE BEHAVIOR

719. 13 574 WHAT ARE THE EFFECTS OF FIRE ON SOIL AND VEGETATIVE COMPOSITION AFTER REPEATED BURNS ON THE KENAI PENINSULA - PARTICULARLY IN RELATION TO RE-ESTABLISHMENT OF MOOSE BROWSE? WILDLIFE,FIRE EFFECTS,SOIL,SHRUBLAND,TAIGA

720. 13 711 WHAT ARE THE RATES AND STAGES OF SUCCESSIONAL CHANGES WHICH FOLLOW FIRE IN BLACK SPRUCE FOREST? CAN WE DEVISE TECHNIQUES TO SPEED OR RETARD THESE SUCCESSIONAL STAGES TO SUIT DESIRED MANAGEMENT OBJECTIVES? SUCCESSION,FIRE EFFECTS,CONIFEROUS FOREST

721. 13 712 WE NEED THE ABILITY TO ACCURATELY PREDICT VEGETATIVE RESPONSE TO BURNS, INCLUDING PRESCRIBED BURNS. ALSO NEED THE ABILITY TO CONTROL OR REGULATE VEGETATIVE COVER OF SPECIFIC AREAS, ESPECIALLY IN CERTAIN KEY WILDLIFE AREAS. WE NEED THE ABILITY TO CREATE A FAVORABLE VEGETATIVE RESPONSE FOR BROWSE CONSUMING WILDLIFE SPECIES. WE NEED THE ABILITY TO CONDUCT PRESCRIBED BURNS ON SELECTED LANDS FOR WILDLIFE ENHANCEMENT. PRESCRIBED FIRE,SHRUBLAND,SHRUB UNDERSTORY,WILDLIFE,FIRE EFFECTS

722. 13 712 WHILE THIS IS PROBABLY BEYOND THE SCOPE OF YOUR DUTIES, THERE IS THE NEED TO OVERCOME THE "SMOKEY BEAR SYNDROME" THAT HAS BEEN DRUMMED INTO THE PUBLIC FOR SO MANY YEARS. NOT ALL FIRES ARE BAD, AND GENERALLY SPEAKING WILDFIRES (EXCEPT THOSE INVOLVING TREMENDOUS ACREAGES) ENHANCE WILDLIFE BY PRODUCING CERTAIN SHRUBS DURING VEGETATIVE SUCCESSION FOLLOWING FIRE THAT BROWSE CONSUMING WILDLIFE DEPEND UPON. INDEED, CERTAIN WILDLIFE SPECIES HAVE EVOLVED WHICH ARE DEPENDENT UPON CERTAIN STAGES OF VEGETATIVE SUCCESSION. MOOSE, DEER, HARES, SOME GROUSE, AND ELK ARE OUTSTANDING EXAMPLES OF WILDLIFE SPECIES WHICH ARE DEPENDENT UPON SHRUBS THAT DEVELOP DURING NATURAL SUCCESSION FOLLOWING FIRES. IN SOME INSTANCES, WILDLIFE VALUES MAY BE HIGHER THAN TIMBER, SCENIC OR OTHER VALUES. FIRE EFFECTS,FIRE EXCLUSION,TAIGA,WILDLIFE,PUBLIC REACTION,SUCCESSION,SMALL MAMMAL,GAME ANIMAL,HUMAN ECOLOGY

723. 13 737 WHAT IS THE IMPACT OF EXCLUDING FIRE IN INTERIOR ALASKA ON ANIMAL AND PLANT EVOLUTION? GENETIC RESPONSE,FIRE EXCLUSION,TAIGA

724. 13 738 ARE INSECT OUTBREAKS, FOLLOWING FIRES, NECESSARY TO MAINTAIN BIRDLIFE POPULATIONS - OR EVEN RELATED? INSECT,FIRE EFFECTS,BIRD

725. 13 738 ARE THERE KNOWN ECOLOGICAL EFFECTS OF WEATHER MODIFICATION IN RELATION TO FIRE MANAGEMENT? GENERAL FIRE MANAGEMENT,CLIMATE,HYDROLOGY,LIGHTNING EFFECTS

726. 13 738 AT WHAT BURN INTENSITY, OR TEMPERATURE, WILL ASPEN, BIRCH, AND WILLOW SEED BE KILLED? HOW LONG WILL HARDWOOD SEEDS REMAIN VIABLE IN DUFF OR IN OUR CASE THE ALASKA VEGETATIVE MAT? SEED,FIRE EFFECTS,HEAT EFFECTS,DECIDUOUS FOREST

727. 13 738 DO FOREST FIRES IN ALASKA INCREASE FINE FUELS OR DECREASE FINE FUELS AND WHAT HAPPENS TO SUBSEQUENT HAZARD AND RISK POTENTIALS? FIRE EFFECTS,FUEL REDUCTION,FLAMMABILITY,FUEL/BIOMASS ACCUMULATION

728. 13 738 IS MORE PROTEIN PRODUCED PER ACRE (ALSO FORAGE) AFTER FIRE? AT BASE-YEAR LEVEL? AT THE 5-YEAR LEVEL? AT THE 50 YEAR LEVEL? SHRUBLAND,WILDLIFE,GAME ANIMAL,FIRE EFFECTS,TAIGA,TUNDRA

729. 13 738 IS THERE A DEFINABLE STATISTICAL DIFFERENCE IN ECOLOGICAL EFFECT BETWEEN NATURALLY (LIGHTNING) CAUSED AND MAN-CAUSED FIRES? LIGHTNING-CAUSED FIRE,MAN-CAUSED FIRE,FIRE EFFECTS

730. 13 738 IT APPEARS THERE IS A DECIDEDLY DIFFERENT LONG-TERM EFFECT ON A TUNDRA AREA BURNED DURING THE LOW WATER TABLE YEARS THAN THE WETTER YEARS, EVEN THOUGH THE INITIAL REMOVAL OF THE TREES BY FIRE MAKES BOTH AREAS LOOK THE SAME IMMEDIATELY AFTER THE FIRE. FIRE EFFECTS,SOIL-WATER RELATIONS,TUNDRA

731. 13 738 WHAT ARE THE SHORT- AND LONG-RANGE PHYSICAL EFFECTS OF FIRE CONTROL ACTIVITIES IN ALASKA (TERRESTRIAL, WATER, PERMAFROST)? SUCH ACTIVITIES INCLUDE: CAT LINES, HAND LINES, USE OF ALL-TERRAIN VEHICLE TANKERS, FIRE RETARDANTS. PERMAFROST,SOIL-WATER RELATIONS,HUMAN DISTURBANCE,GENERAL FIRE MANAGEMENT,FIRE EXCLUSION

732. 13 738 WHAT IS THE EFFECT OF FIRE, WILDFIRE OR PLANNED BURNING, ON SONG BIRD POPULATIONS? WHEN WILL SONG BIRDS RETURN TO A BURN FOR NESTING, SEARCHING FOR FOOD, ETC.? BIRD,ANIMAL BEHAVIOR,FIRE EFFECTS

733. 13 738 WHAT IS THE EFFECT ON THE ENVIRONMENT OF DIFFERENT SNAG DENSITIES ON THE MELTING OF THE SNOW PACK IN SPRING? AFTER 5 YEARS? AFTER 50 YEARS? SNAG,FIRE EFFECTS,SNOW,MICROCLIMATE

734. 13 738 WHAT IS THE NORMAL PLANT SUCCESSION AFTER FIRE IN TAIGA, TUNDRA, ETC., TYPES ON VARIOUS SOILS? WHAT IS NORMAL PLANT SUCCESSION WITHOUT FIRES? WHAT IS THE BASE YEAR IMPACT ON WILDLIFE FROM BURNS IN THESE AREAS? WHAT IS THE 20-50 YEAR IMPACT? IS THE INITIAL LOSS OF HABITAT NECESSARY TO SUSTAIN THE 50-YEAR HABITAT? FIRE EFFECTS,TAIGA,TUNDRA,SUCCESSION,WILDLIFE,FIRE EXCLUSION

735. 14 308 CAN PRESCRIBED BURNING ENHANCE THOSE FACTORS IN PLANT SUCCESSION AND PLANT NUTRITION WHICH CREATE MORE FAVORABLE WINTER RANGE FOR UNGULATES, E.G. MOOSE, CARIBOU, ELK, MULE DEER? CAN BURNING ENHANCE THE PHYSICAL SUITABILITY OF WINTER RANGE, E.G. SNOW DISTRIBUTION AND DENSITY? GAME ANIMAL,SUCCESSION,NUTRIENTS

736. 14 309 HOW DO FIRE ALTERED ENVIRONMENTS, ESPECIALLY THE SIZE OF A BURN, AFFECT THE SPECIES AND DENSITIES OF BIRDS AND MAMMALS THAT OCCUR ON A BURN? AREA SIZE,SPECIES DIVERSITY,BIRD,SMALL MAMMAL,GAME ANIMAL

737. 14 309 WHAT IS THE ROLE OF BIRDS AND MAMMALS IN PREDISPOSING FORESTS TO FIRE AND SHAPING THE GROWTH OF NEW FORESTS AFTER A FIRE? BIRD,SMALL MAMMAL

738. 14 310 CAN SIMPLE TECHNIQUES USING AERIAL PHOTOGRAPHY BE DEVELOPED TO ASSESS THE VALUE OF FIRE SERES FOR NATIVE UNGULATE AND DOMESTIC UNGULATE RANGES IN NORTH CENTRAL BRITISH COLUMBIA? GAME ANIMAL,EXPERIMENT ORIENTED QUESTION

739. 14 310 WHY DO MOOSE IN NORTHERN BRITISH COLUMBIA MOVE TO MATURE FOREST FROM FOREST FIRE SERES IN JANUARY AND FEBRUARY? GAME ANIMAL

740. 14 311 HOW IS ARBOREAL LICHEN PRODUCTIVITY INFLUENCED BY FIRES OF DIFFERENT INTENSITY AND FREQUENCY? THIS QUESTION IS PERTINENT SINCE CURRENT RESEARCH DEMONSTRATES ARBOREAL LICHENS TO COMPRISE A SIGNIFICANT PORTION OF DEER AND ROOSEVELT ELK WINTER DIETS. THE QUESTION THUS COULD BE MORE BROADLY PHRASED TO ASK "HOW DO FIRE INTENSITY AND FREQUENCY INFLUENCE DEER AND ELK WINTER RANGE THROUGH THEIR INFLUENCES ON ARBOREAL LICHEN?" FIRES OF RELATIVELY LIGHT INTENSITY MAY BE CRITICAL UNDER SOME CONDITIONS WHEN LICHENS ARE EXTREMELY FLAMMABLE. I HAVE A POOR FEELING FOR THE FREQUENCY OF LIGHT FIRES IN BOREAL OR COASTAL FORESTS. EPIPHYTE,FIRE INTENSITY,FIRE FREQUENCY,GAME ANIMAL

741. 14 311 IN THE PACIFIC NORTHWEST: WHICH IMPORTANT WILDLIFE FORAGE SPECIES, IF ANY, ROOT SPROUT OR CROWN SPROUT AFTER FIRES OF SEARING INTENSITIES, E.G. GAULTHERIA SHALLON, VACCINIUM SPP.? ARE ANY OF THESE SPECIES ENCOURAGED BY FIRE OTHER THAN THROUGH OPENING OF THE FOREST CANOPY? FIRE INTENSITY,REPRODUCTION,SHRUB UNDERSTORY

742. 14 314 DOES SLASH BURNING REALLY PREVENT LONG-TERM BUILD-UP OF FOREST FLOOR FUELS IN A MANAGED FOREST? FUEL REDUCTION,FUEL/BIOMASS ACCUMULATION

743. 14 314 HOW DOES FIRE AFFECT INFILTRATION RATES? SOIL-WATER RELATIONS

744. 14 314 HOW DOES THE MICROCLIMATE OF A FOREST BURNT BY WILDFIRE COMPARE WITH THAT OF A CLEARCUT WHICH HAS BEEN SLASHBURNED? WHAT EFFECT DOES ANY DIFFERENCE HAVE ON ARTIFICIAL OR NATURAL REGENERATION? MICROCLIMATE,REPRODUCTION,MANIPULATION COMPARISON

745. 14 314 HOW EXTENSIVE IS HYDROPHOBICITY GENERATED BY FIRE? UNDER WHAT CONDITIONS DOES IT OCCUR? HOW LONG DOES IT LAST? WHAT LEADS TO ITS REDUCTION OVER TIME? SOIL-WATER RELATIONS

746. 14 314 TO WHAT EXTENT ARE DIFFERENT NUTRIENTS LOST BY VOLATILIZATION AND FLYASH DURING WILD OR PRESCRIBED FIRE? NUTRIENTS

747. 14 314 TO WHAT EXTENT CAN FIRE RESULT IN SERAL MICROCLIMATE BEING OUT OF PHASE WITH SERAL HUMUS CONDITION? MICROCLIMATE,DUFF,TIMING

748. 14 314 TO WHAT EXTENT DOES FIRE REDUCE ALLELOPATHIC SUBSTANCES OF MATERIALS INHIBITING SEED GERMINATION IN THE FOREST FLOOR? ALLELOPATHY,SEED

749. 14 314 WHAT IS THE EFFECT OF FIRE ON SEED EATING RODENTS? SMALL MAMMAL,SEED

750. 14 319 WHAT IS THE NATURAL FREQUENCY OF WILDFIRES AS REFLECTED IN THE DISTRIBUTION OF AGE CLASSES IN PRE-SETTLEMENT FOREST COVER? CAN THE EVIDENCE OF CLIMATIC VARIATIONS WHICH IS SHOWN IN TREE RINGS (WIDTHS OF, AND SPECIFIC GRAVITY PATTERNS WITHIN EARLYWOOD AND LATEWOOD) BE RELATED TO AGE STRUCTURE OF MATURE FORESTS TO INDICATE PROBABLE PAST FIRE DISTURBANCE PATTERNS? EXPERIMENT ORIENTED QUESTION,FIRE FREQUENCY

751. 14 332 IS FIRE EXCLUSION LIKELY TO PRESERVE INSECT-INFESTED OR DISEASE-INFESTED RESIDUAL TREES WHICH WILL FORM A SOURCE OF INFECTION TO THE SUCCEEDING STAND? IS FIRE EXCLUSION LIKELY TO ENHANCE THE ACCUMULATION OF DISEASE INOCULUM AND INSECT POPULATIONS? FIRE EXCLUSION,INSECT,DISEASE

752. 14 332 WHAT EFFECT DOES SMOKE HAVE ON THE VIABILITY OF AIR-BORNE INSECT AND SPORE POPULATIONS? SMOKE EFFECTS,INSECT,DISEASE,POPULATION

753. 14 332 WHAT WILL BE THE EFFECT OF CHANGING THE NATURAL FIRE FREQUENCY ON THE ESTABLISHMENT OF PLANTS WHICH ARE ALTERNATE HOSTS FOR TREE DISEASES? FIRE FREQUENCY,SUCCESSION,DISEASE,SHRUB UNDERSTORY

754. 14 332 WHAT WILL BE THE EFFECTS OF CONTROLLED BURNING ON STEM DECAY AND ROOT ROT DUE TO FUNGI GAINING ENTRY TO THE TREE THROUGH FIRE SCARS? PRESCRIBED FIRE,FUNGUS,DISEASE,STEM,ROOTS

755. 14 334 AT WHAT FREQUENCY AND VARIOUS FIRE INTENSITIES CAN ANY FOREST ECOSYSTEM BE BURNED WITHOUT DEGRADING THE SITE BEYOND WHAT IT STARTED OUT 100 YEARS PREVIOUS? FIRE FREQUENCY,SUCCESSION,PRODUCTIVITY,FIRE INTENSITY

756. 14 334 CONSIDER EACH CLIMAX FOREST TYPE; DOES THE REPEATED BURNING OF A PRECLIMAX FOREST SYSTEM CAUSE CONTINUED REDUCTION OF THE NUTRIENT BANK? IF YES, HOW MUCH OF A NUTRIENT REDUCTION, AND WHAT FIRE FREQUENCY, MUST OCCUR TO KEEP THE SYSTEM AT EACH SERAL STAGE (CONSIDER ALL STRATA OF THE FOREST SYSTEM)? NUTRIENTS,SUCCESSION,FIRE FREQUENCY

757. 14 334 DESCRIBE THE MOVEMENT OF MICRONUTRIENTS AFTER FIRE IN ALL SOIL TYPES, AT ALL ELEVATIONS, ON ALL ASPECTS AND AT ALL SLOPE ANGLES. NUTRIENTS,SOIL

758. 14 334 HOW MANY 100 YEAR ROTATIONS OF LOGGING AND SLASH BURNING CAN EACH FOREST TYPE HAVE WITHOUT DEGRADING THE SITE BEYOND WHAT IT STARTED OUT 100 YEARS PREVIOUS? FUEL REDUCTION,FIRE FREQUENCY,PRODUCTIVITY,FIRE INTENSITY

759. 14 334 HOW MUCH ORGANIC SOIL REDUCTION WILL RESULT FROM FIRES BURNING THROUGH VARIOUS FUEL COMPLEXES IN RELATION TO CODES OF THE NATIONAL FIRE WEATHER INDEX? FUEL REDUCTION,SOIL

760. 14 334 THE INTENSE HEAT OF SOME FOREST FIRES CAUSES SOME ROCK TO SCALE AND CRACK: THE ASH LEFT ON SOME ROCK REACTS WITH COMPOUNDS AND RESULTS IN ACCELERATED DECOMPOSITION. WHAT IS THE RATE OF ROCK DECOMPOSITION AFTER FIRES OF VARIOUS INTENSITIES AND VARIOUS FREQUENCIES? HEAT EFFECTS,FIRE INTENSITY,ROCK,NUTRIENTS,ASH

761. 14 334 WHAT ARE THE BENEFICIAL EFFECTS OF FIRE BURNING ON RIDGES, MOUNTAIN TOPS AND SIDE HILLS IN RELATION TO AGRICULTURE LANDS DOWN SLOPE? MOSAIC,ZONATION,ECONOMIC EFFECTS

762. 14 334 WHAT IS THE RELATIONSHIP BETWEEN ENERGY RELEASE RATE PER AREA AND NUTRIENT LOSS INTO THE SMOKE COLUMN? WHAT ARE THE LOSS RATES OF NUTRIENTS FROM THE TOTAL NUTRIENT BANK DURING FIRES OF VARIOUS ENERGY RELEASE RATES PER AREA? WHAT MICRONUTRIENTS ARE CARRIED INTO THE SMOKE COLUMN? HOW FAR ARE NUTRIENTS CARRIED BY SMOKE UNDER VARIOUS ATMOSPHERIC CONDITIONS? NUTRIENTS,SMOKE EFFECTS,FIRE INTENSITY,DISPERSION

763. 14 334 WHAT PERCENTAGE OF THE TOTAL NUTRIENT BANK IS MADE AVAILIBLE TO PLANTS AFTER FIRES OF DIFFERENT INTENSITIES, AND FUEL LOADINGS? NUTRIENTS,VEGETATION,FIRE INTENSITY,FUEL/BIOMASS ACCUMULATION

764. 14 334 WHAT PERCENTAGE OF THE TOTAL NUTRIENT BANK IS TIED-UP BY MICROBES AND FUNGAL ACTIVITY AFTER FIRES OF DIFFERENT INTENSITIES, AND FUEL LOADINGS? NUTRIENTS,MICROORGANISM,FIRE INTENSITY,FUEL/BIOMASS ACCUMULATION

765. 14 335 WHAT RANGES OF FIRE BEHAVIOR ARE NORMALLY EXPERIENCED, IN HIGH ELEVATION ENGELMANN SPRUCE-SUBALPINE FIR ALPINE TRANSITION FORESTS AS DEPENDENT ON ELEVATION, INDICATORS OF DROUGHT, WIND VELOCITY, STATE OF CURE OF LESSER VEGETATION? IS FIRE BEHAVIOR ADEQUATELY PREDICTABLE IN THESE HIGH ELEVATION ECOSYSTEMS TO INSURE ACHIEVEMENT OF DESIRED ECOLOGICAL EFFECTS OF LIMITING FIRE SUPPRESSION, AS WELL AS ENSURING PUBLIC SAFETY IN AREAS OF PUBLIC USE WHERE LIMITED FIRE SUPPRESSION IS PRACTICED? WHAT RANGES OF FIRE BEHAVIOR ARE EFFECTIVE IN CHANGING SUCCESSIONAL STAGE IN ALPINE TRANSITION ZONES, WHAT CYCLE LENGTHS ARE INVOLVED IN SUBALPINE SUCCESSIONAL STAGES, AND WHAT IS NORMAL FIRE PERIODICITY IN HIGH ELEVATION SUBALPINE AND ALPINE TYPES IN THE MOUNTAIN WEST? FIRE BEHAVIOR,SUCCESSION,ZONATION

766. 14 336 IN WHITE OR ENGELMANN SPRUCE/ALPINE FIR FORESTS - PARTICULARLY THOSE WITH SOILS OF RELATIVELY LOW NUTRIENT STATUS - WILL SLASH BURNING, AFTER LOGGING FOR HAZARD REDUCTION OR SITE PREPARATION, REDUCE THE FERTILITY (PRODUCTIVITY) OF THE SITE AFTER SEVERAL ROTATIONS, EVEN IF NOT DURING THE FIRST ROTATION AFTER LOGGING THE MATURE STAND? NUTRIENTS,FIRE FREQUENCY,PRODUCTIVITY,PRESCRIBED FIRE,FUEL REDUCTION

767. 14 336 IS FIRE LESS DELETERIOUS THAN CURRENT FORMS OF MECHANICAL SITE PREPARATION FOR HAZARD REDUCTION OR SITE PREPARATION? MANIPULATION COMPARISON,FUEL REDUCTION

768. 14 336 WHAT IS THE EFFECT ON SUBSEQUENT TREE CROP PRODUCTIVITY-UP TO SEVERAL GENERATIONS-OF REDUCTION IN DEPTH OF THE L-F-H LAYER BY BURNING ON VARIOUS TYPES OF SITES - NUTRIENT POOR, NUTRIENT RICH, SHALLOW OR DEEP L-F-H: CONSEQUENTLY ON WHICH SITES CAN WHAT INTENSITY OF PRESCRIBED BURNING BE RECOMMENDED? LITTER,NUTRIENTS,FUEL REDUCTION,FIRE FREQUENCY,PRODUCTIVITY

769. 14 338 THE NORTHERN BOREAL FOREST AREAS CHARACTERIZED BY CLADONIA GROUND COVER NORMALLY EXPERIENCE FEW RELATIVELY SHORT PERIODS CONDUCIVE TO FIRE PROPAGATIONS. THE RAPID RESPONSE OF FIRE-RELATED NATURAL PHENOMENA WOULD SEEM TO INDICATE THAT RELATIVELY FEW, VERY LARGE FIRES ARE A NECESSARY COMPONENT OF THE NORTHERN BOREAL FOREST: CONSIDER- A) THE RAPID DRYING OF CLADONIA MOSS AND THE MINIMAL UPPER PORTION THAT MUST BE AVAILABLE TO SUPPORT COMBUSTION. B) THE CONTINUOUS NATURE OF THIS FUEL TYPE COMBINED WITH A FULLY INTEGRATED EXTREMELY FLAMMABLE (SPRUCE-FIR) AERIAL FUEL COMPONENT THAT PROVIDES RAPID TRANSITION TO THE CROWNING STAGE IN A FUEL TYPE (TRUE FIR) NOTED FOR FIRE BRAND INITIATION. THE EASE OF CLADONIA MOSS IGNITION, ENSURES A HIGH IGNITION

PROBABILITY UPON CONTACT. C) THE COINCIDENCE OF WEATHER SYSTEMS (HUDSON BAY HIGH) THAT INVOLVE A COMBINATION OF SUSTAINED HIGH WINDS AND SEVERE DRYING THAT COINCIDE WITH A PERIOD WHEN FOLIAR FLUSHING, AND FROZEN SOILS MAY RESULT IN SEVERE DEPRESSION OF FOLIAR MOISTURE CONTENT. THE COMBINATION OF WEATHER AND THE PECULIARITIES OF THE FUEL COMPLEX INDICATE A NATURAL SYSTEM THAT INSURES MAXIMUM BURNED AREA IN THE SHORT TIME AVAILABLE. IF THESE CIRCUMSTANCES ARE NOT COINCIDENTAL THEN THE VERY COSTLY FIRE CONTROL EFFORT ON NATURAL CAUSED FIRES MUST BE DETRIMENTAL TO THIS ECOSYSTEM AND THE CLADONIA MOSS COMMUNITIES. WHAT THEN IS THE RELATIONSHIP BETWEEN CLADONIA COMMUNITIES, CARIBOU AND FIRE? CUSHION PLANTS,FIRE BEHAVIOR,AREA SIZE,CROWN BURN,CLIMATE,SOIL-WATER RELATIONS,FIRE EXCLUSION,GAME ANIMAL

770. 14 758 WHAT ARE THE EFFECTS OF BURNING A CLIMAX FOREST AS COMPARED TO A SECOND GROWTH FOREST OR A LOGGED-OVER CLEARCUT IN TERMS OF RESULTING PLANT COMMUNITIES AND SOIL DEVELOPMENT? TO WHAT EXTENT DO FIRES BURN IN CLIMAX FORESTS WITHOUT ALTERING THE BASIC CHARACTER OF THE FOREST? IN OTHER WORDS CAN A FIRE BURN IN A MATURE FOREST WITHOUT DESTROYING THAT FOREST? FIRE EFFECTS,SUCCESSION,MANIPULATION COMPARISON,COMMUNITY

771. 14 758 WHAT ARE THE EFFECTS OF TIMING (SEASON) AND FIRE INTENSITY, ON THE SUCCESSIONAL STAGES THAT DEVELOP AFTER A FOREST FIRE? WE ARE CONCERNED WITH DOUGLAS-FIR FORESTS BUT ALSO TO A LESSER DEGREE PONDEROSA PINE FORESTS, WESTERN LARCH FORESTS, SPRUCE AND FIR FORESTS. THE REASON FOR THIS QUESTION IS IN SOME AREAS A DOUGLAS-FIR FOREST REGENERATES TO LODGEPOLE PINE OR TO ASPEN OR TO WILLOW. WHAT CAUSES THESE DIFFERENT SERAL COMMUNITIES? IS IT FIRE INTENSITY, SEASON OF THE BURN, SOIL CONDITION OR THE TYPE OF FOREST? FIRE INTENSITY,TIMING,SOIL,FIRE EFFECTS,SUCCESSION,CONIFEROUS FOREST

772. 14 758 WHAT ARE THE SIMILARITIES AND DIFFERENCES BETWEEN A CLEARCUT LOGGING OPERATION AND A FOREST FIRE ON AREAS OF THE SAME SIZE? WE ARE INTERESTED IN SOIL PROPERTIES SUCH AS MOISTURE HOLDING CAPACITY, ORGANIC MATTER, CARBON:NITROGEN RATIO, CALCIUM:PHOSPHOROUS RATIO, CHANGES IN THE CHEMICAL PROPERTIES OF STREAMS, AND RESULTING PLANT COMMUNITY DEVELOPMENT. HUMAN DISTURBANCE,MANIPULATION COMPARISON,SOIL-WATER RELATIONS,COMPOUNDS,ELEMENTS,STREAM,CONIFEROUS FOREST,FIRE EFFECTS

773. 14 758 WHAT EFFECTS DO FOREST FIRES HAVE ON THE CHEMICAL CONTENT OF STREAMS, BOTH IN THE AREA OF THE FIRE AND DOWNSTREAM? WHAT EFFECT DO FOREST FIRES HAVE ON SEDIMENT DEPOSITS IN THE STREAM? CONSIDER THINGS SUCH AS FLY-ASH AND SOIL. STREAM,FIRE EFFECTS,ASH,SOIL EROSION

774. 14 759 CAN GUIDELINES AND TECHNIQUES BE CREATED FOR CONTROLLED BURNING OF NON-MERCHANTABLE FORESTS FOR WILDLIFE? GENERAL FIRE MANAGEMENT,ANIMALS

775. 14 759 HOW CAN FIRE ELIMINATE, OR PROMOTE, FOREST PATHOGENS AND DESTRUCTIVE, OR BENEFICIAL (E.G. FISH FOOD), INSECT POPULATIONS? DISEASE,INSECT,POPULATION

776. 14 759 HOW DO DIFFERENT INTENSITY BURNS AFFECT SOIL NUTRIENTS, E.G. WHAT PERCENTAGES OF MINERAL SOIL AND ORGANIC MATTER ARE LOST? WHAT IS THE AFFECT ON GROWING SITE? FIRE INTENSITY,NUTRIENTS,FUEL REDUCTION,SOIL

777. 14 759 HOW DO RECURRING BURNS AFFECT SEED SOURCE? FIRE FREQUENCY,SEED,REPRODUCTION

778. 14 759 HOW DOES THE CONSUMPTION OF FUELS (E.G. IMMATURE CONIFERS AFTER SPRING FLUSHING VERSUS DORMANT DECIDUOUS VEGETATION OR, GREEN SLASH VERSUS CURED SLASH) AFFECT SOILS AND WATER QUALITY? FUEL REDUCTION,NUTRIENTS,SOIL,HYDROLOGY

779. 14 759 UNDER WHAT CONDITIONS DO CONIFEROUS STANDS BURN BUT DECIDUOUS STANDS NOT IGNITE (AND VICE VERSA)? FLAMMABILITY,CONIFEROUS FOREST,DECIDUOUS FOREST

780. 14 759 WHAT ARE THE ECONOMICS OF FIRE SUPPRESSION IN NON-COMMERCIAL STANDS: RATING BENEFITS OF SUPPRESSION VERSUS BENEFIT TO WILDLIFE GAINED BY LEAVING SUCH FIRES TO BURN? ECONOMIC EFFECTS,FIRE EXCLUSION,ANIMALS

781. 14 759 WHAT ARE THE EFFECTS UPON WATER AND SOIL, OF DIFFERENT FIRE SUPPRESSION TECHNIQUES, E.G. PERMANENT RETARDANT APPLICATION? CHEMICAL RETARDANT EFFECTS,NUTRIENTS,SOIL

782. 14 759 WHAT ARE THE IMMEDIATE AND LONG TERM IMPACTS UPON WATER QUALITY FROM DIFFERENT INTENSITY BURNS, ESPECIALLY FROM HOT BURNS ADJACENT TO WATER BODIES? AQUATIC,NUTRIENTS,HYDROLOGY,FIRE INTENSITY,AREA SIZE,MOSAIC

783. 14 759 WHAT DEER AND MOOSE BROWSE-SPECIES REGENERATE BEST AFTER BURNING: HOW DOES THE INTENSITY OF BURN AFFECT REGENERATION? FIRE INTENSITY,GAME ANIMAL,REPRODUCTION,HERBIVORY

784. 14 759 WHAT INTENSITIES OF GROUND-FIRE CAN BE TOLERATED BY DIFFERENT UNDERSTORY AND OVERSTORY SPECIES? FIRE INTENSITY,HERBAGE UNDERSTORY,SHRUB UNDERSTORY,CONIFEROUS FOREST,GROUND FIRE

785. 14 762 DOES ASH IN CREEK AND POND BOTTOMS HAVE A POSITIVE OR NEGATIVE EFFECT UPON INVERTEBRATES? ASH,FIRE EFFECTS,STREAM,LAKE

786. 14 762 DURING A FIRE IS OXYGEN ABSTRACTED FROM PONDS OR RUNNING WATER? IF A FIRE PASSES OVER OR BY A STREAM OR POND WHICH HAS A LOW DISSOLVED OXYGEN CONCENTRATION CAN THIS CONCENTRATION BE LOWERED BY THE FIRES' DEMAND FOR OXYGEN? STREAM,LAKE,FIRE EFFECTS,MICROCLIMATE

787. 14 762 HOW FAR DOWNSTREAM DOES THE CARBONIFEROUS WASTE MATERIAL TRAVEL? IS THIS DISTANCE A FUCTION OF TIME,

GRADIENT, TEMPERATIURE? IN A 3% STREAM GRADIENT WILL THE DEBRIS EFFECTS BE FELT DOWNSTREAM? IF SO, HOW FAR? WILL IT FLUSH IN ONE YEAR? STREAM,CHARCOAL,ASH,FIRE EFFECTS

788. 14 767 CAN ONE PREDICT POST-FIRE SUCCESSION, KNOWING ORIGINAL VEGETATION AND CHARACTERISTICS OF FIRE (INTENSITY, ENERGY RELEASED, TYPE, ETC.)? SUCCESSION,FIRE EFFECTS,FIRE INTENSITY,FIRE BEHAVIOR

789. 14 767 COULD LODGEPOLE PINE STANDS BE CONVERTED TO SOME MORE USEFUL TYPE OF VEGETATION BY REPEATED BURNING AND RESEEDING? FIRE EFFECTS,FIRE FREQUENCY,CONIFEROUS FOREST,HUMAN DISTURBANCE

790. 14 767 DO FIRES ON WETTER TIMBER SITES LEAD TO PALUDIFICATION? SOIL-WATER RELATIONS,CONIFEROUS FOREST,FIRE EFFECTS

791. 14 767 DOES VEGETATION OF POST-FIRE COMMUNITIES DIFFER FROM POST-LOGGING COMMUNITIES WITH RESPECT TO CHEMICAL COMPOSITION OF THE SAME PLANT SPECIES. SUCCESSION,HUMAN DISTURBANCE,COMPOUNDS,ELEMENTS,FIRE EFFECTS,ALLELOPATHY

792. 14 767 HOW HAS/DOES FIRE EXCLUSION AFFECTED/AFFECT THE SPECIES COMPOSITION, ABUNDANCE, AND NUTRITIONAL QUALITY OF THE UNDERSTORY OF THE DOUGLAS-FIR ZONE IN INTERIOR BRITISH COLUMBIA? (WE ARE ESPECIALLY CONCERNED WITH WILLOW AND AMELANCHIER SPECIES WHICH SEEM TO DECLINE BOTH IN QUALITY AND QUANTITY WHEN FIRE IS EXCLUDED). FIRE EXCLUSION,SHRUB UNDERSTORY,SPECIES DIVERSITY,NUTRIENTS,DECIDUOUS FOREST,CONIFEROUS FOREST

793. 14 767 HOW VARIABLE IS A FIRE IN ITS EFFECTS ON A RELATIVELY HOMOGENEOUS AREA? FIRE EFFECTS,FIRE BEHAVIOR

794. 14 767 WHAT ARE ACTUAL LOSSES OF WILDLIFE DUE TO FIRE, WHEN CONSIDERED OVER LONG TIME PERIODS? FIRE EFFECTS,ANIMAL BEHAVIOR,MORTALITY,WILDLIFE

795. 14 767 WHAT ARE EFFECTS OF FIRE ON SOIL MICROORGANISMS? FIRE EFFECTS,SOIL,MICROORGANISM

796. 14 767 WHAT ARE LONG-TERM CONSEQUENCES OF REPEATED FIRES ON A SITE, I.E. IS A SITE DEGRADED, IS THERE A SPACING (TIME-WISE) OF FIRE THAT IS CRITICAL? (THINKING OF REPEATEDLY BURNED LODGEPOLE PINE AREAS) FIRE EFFECTS,TIMING,FIRE FREQUENCY,CONIFEROUS FOREST

797. 14 767 WHAT ARE MAJOR DIFFERENCES BETWEEN PRESCRIBED AND WILDFIRES? PRESCRIBED FIRE,MAN-CAUSED FIRE,LIGHTNING-CAUSED FIRE,FIRE EFFECTS

798. 14 767 WHAT ARE THE MECHANISMS EVOLVED BY CONIFEROUS FORESTS TO PROTECT THEMSELVES AGAINST FIRE? HOW ARE THESE AFFECTED BY FIRE EXCLUSION? GENETIC RESPONSE,FIRE EFFECTS,FLAMMABILITY,FIRE EXCLUSION,CONIFEROUS FOREST

799. 14 767 WHAT ARE THE SPECIFIC CHANGES IN SUSCEPTIBILITY TO FIRE WITH AGING OF THE FOREST IN VARIOUS PLANT ASSOCIATIONS? THIS IS IMPORTANT BECAUSE WE NEED TO KNOW HOW VULNERABLE WILDLIFE RESERVE AREAS WILL BE. IT IS PERTINENT TO SELECTING AREAS FOR CARIBOU WINTER RANGE TO BE RESERVED FROM LOGGING. FLAMMABILITY,AGE,WILDLIFE

800. 14 767 WHAT ARE THE TOTAL COSTS OF FIRE FIGHTING WITH DIFFERENT METHODS? BULLDOZED FIREGUARDS ARE A MAJOR CONTRIBUTING FACTOR TO EROSION IN MANY OF OUR MOUNTAINOUS AREAS. THEY CREATE HIGH SILT LOADS IN FEEDER STREAMS AND USUALLY RETARD SUCCESSION TO ITS VERY EARLIEST STAGE. AESTHETIC LOSSES ARE OFTEN CONSIDERABLE BECAUSE FIREGUARDS ARE CONSTRUCTED QUICKLY TO STOP FIRES AND NO CONSIDERATION IS GIVEN TO THE EFFECTS OF LANDSCAPE SCARRING. IT APPEARS THAT THERE IS A GOOD OPPORTUNITY TO DO COST BENEFIT ANALYSES HERE THAT MAY LEAD TO MORE SPARING USE OF FIREGUARDS IN CONTROLLING FOREST FIRES. ECONOMIC EFFECTS,FIRE EXCLUSION,SUCCESSION,HUMAN DISTURBANCE,SOIL EROSION,AESTHETICS

801. 14 767 WHAT IS THE RELATIONSHIP OF FIRE SIZE AND FIRE INTENSITY TO THE TYPE OF REVEGETATION ON BURNED CONIFEROUS STANDS? (AT WHAT SIZE BURN DOES SEED WEIGHT BECOME AN IMPORTANT FACTOR?) AREA SIZE,FIRE INTENSITY,SEED,DISPERSION,CONIFEROUS FOREST,ORGAN

802. 14 767 WHAT WAS THE "NATURAL" PATTERN OF FIRE IN VARIOUS BIOGEOCLIMATIC ZONES HAVING CONIFEROUS FORESTS? IT IS IMPORTANT TO INVESTIGATE THIS VERY SOON BECAUSE MANY OF THESE ZONES ARE BEING LOGGED SO QUICKLY THAT THERE WON'T BE ENOUGH AREA IN WHICH TO WORK. FIRE HISTORY,FIRE EFFECTS,MICROCLIMATE,HUMAN DISTURBANCE,MOSAIC

803. 14 767 WHAT WOULD BE THE ECOLOGIC CONSEQUENCES OF TRYING TO PERPETUATE DECIDUOUS SUB CLIMAX STANDS IN AN AREA WHERE CONIFERS MAKE UP THE CLIMAX FOREST? SUCCESSION,DECIDUOUS FOREST,CONIFEROUS FOREST

804. 14 791 IN BROADCAST SLASH BURNING OF HEAVY RESIDUES SUCH AS THOSE ENCOUNTERED IN B.C. INTERIOR WET BELT CEDAR-HEMLOCK STANDS, WHAT IS THE EFFECT ON THE PHYSICAL AND CHEMICAL PROPERTIES OF VARIOUS SOILS IN RESPECT TO SECURING NATURAL AND ARTIFICIAL CONIFEROUS REGENERATION? IS TOO MUCH EMPHASIS PLACED ON HAZARD REDUCTION IN BROADCAST SLASH BURNING RATHER THAN MAINTENANCE OF AVAILABLE NUTRIENT FOR FOREST REGENERATION? THIS APPLIES TO PRESCRIBED BROADCAST BURNING ON DIFFERENT SITE TYPES, NOT ONLY CEDAR-HEMLOCK. PRESCRIBED FIRE,FUEL REDUCTION,SOIL,NUTRIENTS,CONIFEROUS FOREST,REPRODUCTION,FIRE EFFECTS

805. 14 798 A LARGE PORTION OF THE SURROUNDING AREA IS COVERED BY BLACK SPRUCE GROWING ON MUSKEG SITES OFTEN ASSOCIATED WITH PERMAFROST. MUCH OF THE AREA HAS BEEN REPEATEDLY BURNED. DOES FREQUENT BURNING OF THIS TYPE OF FOREST TEND TO PROLONG THE WET STATE BECAUSE OF THE LOSS OF THE MOISTURE REMOVING EFFECTS OF TRANSPIRATION? WOULD

LONG-TERM TOTAL EXCLUSION OF FIRE FROM BLACK SPRUCE FOREST ON MUSKEG SITES WITH PERMAFROST TEND TO PROMOTE DRYING OF THE SITE THROUGH INCREASED TRANSPIRATION BY THE ADDED FOREST COVER, OR WOULD THE RATE OF EVAPORATION FROM THE SAME SITE IN A FIRE-DENUDED STATE EXCEED MOISTURE LOSS BY TRANSPIRATION? FIRE EXCLUSION,FIRE EFFECTS,TAIGA,PERMAFROST,SOIL-WATER RELATIONS,MICROCLIMATE

806. 14 799 CAN PRESCRIBED BURNING REDUCE WATER EVAPORATION BY TREES, PARTICULARLY DECIDUOUS, THEREBY INCREASING SUMMER WATER LEVELS? IF SO, WHAT WOULD BE THE MAXIMUM REMOVAL ALLOWED? PRESCRIBED FIRE,HYDROLOGY

807. 14 799 DEPENDENT UPON TIMBER TYPES, SOILS AND SLOPES, SHOULD AREAS RECOMMENDED FOR SLASH BURNING BE SUMMER OR WINTER LOGGED? FUEL REDUCTION,TIMING

808. 14 799 DOES A BURNED OPENING IN CONIFEROUS FOREST INCREASE GOOD GRASSES FOR RANGE CATTLE, OR DOES IT BRING ON FAST SPREADING WEEDS? AREA SIZE,SUCCESSION,COMPETITION

809. 14 799 DOES SLASH BURNING CREATE ASH PROBLEMS IN STREAMS, IF SO, IS THE ASH HARMFUL TO FISH? FUEL REDUCTION,ASH,STREAM,FISH

810. 14 799 DOES THE LIVING FOREST COMMUNITY REQUIRE A FREE RUNNING GROUND FIRE IN ORDER TO STAY THRIFTY AND HEALTHY, OR IS IT ONLY A REDUCTION IN FIRE HAZARD? IN SHORT, DOES ONE REASON OUTWEIGH THE OTHER? GROUND FIRE,PRODUCTIVITY, FUEL REDUCTION

811. 14 799 THE EFFECTS OF SUMMER VS. WINTER LOGGING ON SCARIFICATION AND REGENERATION, PARTICULARLY IN LODGEPOLE PINE STANDS WHERE THERE IS OFTEN ONLY 2-4 INCHES OF LIGHT SOIL ON GRAVEL: DOES SUMMER WHOLE-TREE SKIDDING CREATE TOO MUCH DISTURBANCE ON THESE LOOSE SOILS? WE HAVE NOTED ON SOME HILLSIDES THAT THERE IS THIN SOIL. SHOULD THESE AREAS BE WINTER LOGGED?--WITH WHOLE TREES REMOVED AND TOPS BURNED AT THE LANDINGS WILL THERE BE SUFFICIENT NUTRIENTS LEFT TO BRING THE NEW CROP TO HARVEST OR WILL IT STAGNATE AFTER 20 OR 30 YEARS?--SHOULD THE TOPS BE LEFT AND WALKED OR ROLLED DOWN WITH HEAVY EQUIPMENT? WHAT TYPE OF EQUIPMENT ACHIEVES MAXIMUM DESIRED RESULTS? FIRE INTENSITY,NUTRIENTS,PRODUCTIVITY,PRESCRIBED FIRE,STABILITY,SOIL,REPRODUCTION,MANIPULATION COMPARISON,FUEL REDUCTION,DECOMPOSITION

812. 14 799 HOW FAR DOWNSTREAM DO LARGE SLASH BURNS AFFECT STREAMS IN SILTATION, TEMPERATURES AND OTHERS BEFORE THE STREAMS FILTER THEMSELVES OUT? IS THERE SUCH A THING AS AN OPTIMUM SIZE FOR ANY GIVEN BURN UNDER VARIOUS CONDITIONS? AREA SIZE,STREAM,SOIL EROSION

813. 14 799 HOW LARGE CAN A BURNED OPENING BE BEFORE THERE IS ANY SERIOUS AFFECT ON THE STREAM FLOW AND SUBTERRANEAN WATER LEVELS DUPING RUN-OFFS AND SUMMER DROUGHTS? AREA SIZE,HYDROLOGY

814. 14 799 IN FREE RUNNING GROUND FIRES, ARE THERE ANY BENEFICIAL RESULTS TO FOREST GROWTH? EXPERIMENT ORIENTED QUESTION,GROUND FIRE,PRODUCTIVITY

815. 14 799 IS THERE AN INCREASE OR DECREASE IN SMALLER WILDLIFE IN 2-5 YEARS AFTER BURNING AS AGAINST THE OTHER TREATMENTS? ANIMALS,TIMING,POPULATION,PRODUCTIVITY

816. 14 799 IS THERE ANY APPRECIABLE CHANGE IN NEW CROPS AS TO HEALTH AND VIGOR IN BURNS AS COMPARED TO OTHER TREATMENTS? DO BURNS DESTROY SOME PATHOLOGICAL DISEASES AND INCREASE OTHERS? DISEASE,MANIPULATION COMPARISON

817. 14 799 ON LIGHT SOILS, DOES SLASH BURNING LEAVE SUFFICIENT NUTRIENTS TO ALLOW THE NEXT TREE CROP TO PRODUCE BIOMASS AT THE SAME RATE AS THE HARVESTED CROPS? FUEL REDUCTION,NUTRIENTS,REPRODUCTION,FUEL/BIOMASS ACCUMULATION

818. 14 799 SHOULD BURNED OPENINGS IN CONIFEROUS FORESTS BE SOWN TO GRASSES IN ORDER TO CURTAIL AN EXCESS OF REGENERATION IN SOME PINE AND LARCH AREAS? PLANTING,SOIL EROSION,HYDROLOGY

819. 14 799 SHOULD INITIAL PRESCRIBED BURNING BE AT THE HIGHER ELEVATION FIRST, THEREBY PERHAPS ALLOWING THE LOWER COVER TO FILTER OUT EROSION AND ABSORB EXCESS RUN-OFFS INTO STREAMS? PRESCRIBED FIRE,ZONATION,SOIL EROSION,STREAM

820. 14 799 SHOULD PRESCRIBED CROWN-FIRE AREAS IN MOUNTAINOUS TERRAIN BE CROSS VALLEY OR PARALLEL? SHOULD THEY BE CONTOUR ON HILLSIDES? ALL OF THESE OPENINGS HAVE DECIDEDLY DIFFERENT IMPACTS ON STREAM FLOW, TEMPERATURE, SILTATION, WILDLIFE COVER AND AQUATIC LIFE. PRESCRIBED FIRE,MOSAIC,TOPOGRAPHY,HYDROLOGY,MICROCLIMATE,ANIMALS,SOIL EROSION

821. 14 799 WHAT DIFFERENCE IS THERE IN DAY/NIGHT HUMIDITIES AND RECOVERY BETWEEN BURNED OPENINGS AND ADJACENT FOREST COVER? MICROCLIMATE

822. 14 799 WHAT IS THE HEAT INCREASE IN STREAM TEMPERATURES AFTER BURNING OFF COVER TO THE BANKS AND WHAT WOULD BE THE MAXIMUM DISTANCE ALLOWED BEFORE THIS TAKES PLACE? (STREAM VOLUME AND SPEED OF FLOW WILL ALSO BE DECIDING FACTORS) STREAM,MICROCLIMATE,VEGETATION

823. 14 799 WHAT IS THE SUMMER HEAT INCREASE ON BLACKENED AREAS AS COMPARED TO UNBURNED SLASH AND THE BLOCKS OF TIMBER LEFT? WHAT ARE THE COMPARISONS IN HUMIDITIES, IN WATER LEVELS, IN NATURAL REGENERATION, IN SNOW MELT? FUEL REDUCTION,MANIPULATION COMPARISON,MICROCLIMATE,REPRODUCTION,HYDROLOGY

824. 14 799 WITH PRESCRIBED GROUND FIRE, HOW MUCH MORTALITY IS THERE ON CONIFEROUS SPECIES AND HOW MANY WILL BECOME CAT-FACED AND FIRE SCARRED? WHAT IS THE RECOVERY PERIOD IN VARIOUS TIMBER TYPES? EXPERIMENT ORIENTED QUESTION,GROUND FIRE,MORTALITY

825. 14 799 WITH SLASH BURNING AFTER LOGGING, IS THERE AN INCREASE OR DECREASE IN EROSION AS COMPARED TO SCARIFICATION? FUEL REDUCTION,MANIPULATION COMPARISON,SOIL EROSION,

826. 14 801 CURRENTLY WE ARE FACED WITH UNFAVORABLE PUBLIC REACTION TO SMOKE POLLUTION FROM SLASH BURNING. "SMOKE MANAGEMENT" IS NOT SUCCESSFUL TO A LARGE ENOUGH DEGREE AND WE ARE LOOKING AT A "SMOKELESS" ENVIRONMENT FOR THE FUTURE - BY POPULAR DEMAND. AIR POLLUTION,VALUE JUDGEMENT,PUBLIC REACTION,AESTHETICS,FUEL REDUCTION,PRESCRIBED FIRE

827. 14 801 IS SMOKE AN ECOLOGICAL NECESSITY FOR A BALANCED ATMOSPHERIC CONDITION IN THE LONG PULL? MICROCLIMATE,SMOKE EFFECTS

828. 14 801 THIS YEAR, IN ONE FOREST DISTRICT, OVER 1,000 FIRES WERE EXTINGUISHED IN THE INCIPIENT STAGES. WHILE 80% OF THESE WERE HUMAN-CAUSED, AND NOT PART OF THE NATURAL CYCLE, 200 LIGHTNING FIRES COULD HAVE BURNED THOUSANDS OF ACRES IF LEFT ALONE. WHAT EFFECTS DOES THIS FIRE EXCLUSION MANIPULATION HAVE ON ALL ASPECTS OF THE ECOLOGICAL SCENE? SMOKE AND ASH NUTRIENTS LOST? SUCCESSION CROPS NOT REPLACING DECADENT STANDS AND SOIL NUTRIENTS NOT REPLENISHED THROUGH NATURAL CROP ROTATIONS? INCREASING SCARCITY OF BROWSE FOR UNGULATE RANGE? FIRE EXCLUSION,FIRE EFFECTS,WILDLIFE,NUTRIENTS,ASH,SUCCESSION,SPECIES DIVERSITY

829. 15 320 WHAT ARE THE LONG AND SHORT-TERM EFFECTS OF FOREST FIRES ON THE NUTRIENT LEVELS IN MOUNTAIN LAKES? IS PRODUCTIVITY AFFECTED SIGNIFICANTLY? WHAT CHANGES OCCUR IN THE PLANKTONIC, BENTHIC, AND SHORELINE COMMUNITIES? WHAT CHANGES OCCUR IN THE INPUT OF TERRESTRIAL INSECTS WHICH WOULD SERVE AS IMPORTED FISH-FOOD ORGANISMS? FIRE EFFECTS,FISH,NUTRIENTS,LAKE,MOUNTAIN,INSECT,ECOSYSTEM,PRODUCTIVITY

830. 15 323 ARE THE RELATIVE FLAMMABILITIES OF CONIFEROUS FOREST UNDERSTORY STRATA CORRELATED WITH SUCCESSIONAL STAGES? FLAMMABILITY,SUCCESSION,SHRUB UNDERSTORY

831. 15 323 CAN WE DEVELOP CLASSIFICATION OF CONIFEROUS FOREST SPECIES BASED ON ABILITY TO SURVIVE FIRES OF DIFFERENT INTENSITIES? HEAT EFFECTS,ORGANISM,FIRE EFFECTS,MORTALITY

832. 15 323 CAN WE DEVELOP KEYS FOR THE IDENTIFICATION OF HABITAT TYPES (SENSU DAUBENMIRE) USING BOTANICAL ATTRIBUTES OF SUCCESSIONAL COMMUNITIES THAT DEVELOP AFTER FIRE? SUCCESSION,COMMUNITY

833. 15 323 DOES FIRE UPSLOPE INCREASE THE AVAILABLE NUTRIENT BUDGET OF DOWNSLOPE CONIFEROUS FORESTS TO ANY DEGREE, AND HOW FAR FROM THE FIRE MARGIN DOES THIS ENHANCEMENT OCCUR? NUTRIENTS,SOIL-WATER RELATIONS,TOPOGRAPHY

834. 15 323 WHAT ARE THE POSSIBLE STRATEGIES FOR USE OF FIRE AS A VEGETATION MANAGEMENT TOOL IN NATIONAL PARKS AND WILDERNESS AREAS? PRESCRIBED FIRE,GENERAL FIRE MANAGEMENT,RECREATION

835. 15 323 WHAT ARE THE RECOVERY RATES OF CONIFEROUS FOREST FLOOR BRYOPHYTE MICROCOMMUNITIES AFTER CROWN/GROUND FIRES? CUSHION PLANTS,GROUND FIRE,CROWN BURN,LITTER,DUFF

836. 15 324 WHAT ARE THE ACTUAL EFFECTS OF PRESCRIBED BURNING WHITE SPRUCE LOGGING SLASH IN THE SUB-ALPINE FOREST REGION ON REGENERATION OF WHITE SPRUCE? PRESCRIBED FIRE,FIRE EFFECTS,REPRODUCTION,,MOUNTAIN

837. 15 324 WHAT HAS BEEN THE ACTUAL HISTORIC ROLE OF FIRE IN NORTHERN CONIFEROUS FORESTS? WHAT ACTUAL EFFECTS HAS THE FIRE EXCLUSION POLICY BROUGHT ABOUT?--AND WHAT WILL THE LIKELY EFFECTS OF CONTINUED FIRE EXCLUSION BE? FIRE HISTORY,FIRE EXCLUSION

838. 15 327 WHAT ARE THE EFFECTS OF DIFFERING INTENSITIES OF FIRE ON THE DEVELOPMENT OR SUBSIDENCE OF PERMAFROST? PERMAFROST,FIRE EFFECTS,FIRE INTENSITY,SOIL-WATER RELATIONS,HEAT EFFECTS,ECOSYSTEM

839. 15 328 WHAT IS THE LONG-TERM EFFECT OF REPEATED SLASH-BURNING (OVER SEVERAL CUTTING CYCLES) ON THE PRODUCTIVITY OF CONIFEROUS FOREST ECOSYSTEMS, ESPECTALLY ON STEEP SLOPES IN AREAS OF HIGH RAINFALL? CLIMATE,PRESCRIBED FIRE,TIMING,PRODUCTIVITY,CONIFEROUS FOREST,ECOSYSTEM,MOUNTAIN,TOPOGRAPHY,SOIL,FIRE EFFECTS

840. 15 328 WHAT IS THE LONG-TERM EFFECT OF THE EXCLUSION OF FIRE FROM EXTENSIVE CONIFEROUS MONOCULTURES (PLANTATION) ON THE FUTURE PRODUCTIVITY OF THESE AREAS, IN TERMS OF BOTH PLANT AND ANIMAL POPULATION? FIRE EXCLUSION,CONIFEROUS FOREST,PRODUCTIVITY,ANIMALS

841. 15 342 HOW CAN WE PREDICT THE EFFECTS OF FIRES OF VARIOUS INTENSITIES ON PERMAFROST STABILITY AND DEPTH OF THAW AS MODIFIED BY LANDFORM, DRAINAGE, AND SOIL? PERMAFROST,FIRE EFFECTS,HEAT EFFECTS,SOIL-WATER RELATIONS,TOPOGRAPHY

842. 15 343 FIRE INTENSITY IS A FUNCTION OF AVAILABLE FUEL. THE AVAILABLE FUEL IS IN TURN A FUNCTION OF THE CURRENT MOISTURE REGIME. WHICH FIRE INTENSITIES BEST LEND THEMSELVES TO HEALTHY DYNAMIC, HETEROGENOUS ECOSYSTEMS? FIRE INTENSITY,DENSITY,COMPETITION,FLAMMABILITY,ECOSYSTEM

843. 15 343 HOW DOES THE ENERGY BUDGET OF A FOREST FIRE COMPARE WITH OTHER ENERGY EXCHANGE SYSTEMS? (BOTH BIOLOGICAL, E.G. PHOTOSYNTHESIS AND PHYSICAL E.G. AVALANCHE,FLOODING, EROSION,ETC.) FIRE INTENSITY

844. 15 343 WHAT ARE THE EFFECTS OF FIRE EXCLUSION ON THE DIVERSITY OF PLANT-ANIMAL COMMUNITIES? DOES IT LEAD TO

STABLE ECOSYSTEMS? DOES IT LEAD TO STERILE ECOSYSTEMS? WHICH SPECIES (PLANT, AVIFAUNA,FAUNA) ARE THE FIRST TO EXPERIENCE THE IMPACT OF FIRE EXCLUSION? COMMUNITY,FIRE EXCLUSION,VEGETATION,WILDLIFE

845. 15 345 DOES THE BENEFIT ACCRUED FROM EXCLUDING FIRE FROM THE FOREST EXCEED THE COST OF THIS EXCLUSION POLICY? THE BENEFITS UNDER CONSIDERATION ARE THOSE VALUES THAT MAN PLACES ON THE FOREST. FIRE EXCLUSION,ECONOMIC EFFECTS,HUMAN ECOLOGY

846. 15 345 IN THE DISCONTINUOUS PERMAFROST ZONE, WHAT ARE THE RELATIVE SUSCEPTIBILITIES OF VARIOUS LANDSCAPE UNITS AND VARIOUS VEGETATION TYPES TO FIRE-GENERATED FLOWSLIDES? FIRE EFFECTS,SOIL EROSION,PERMAFROST,COMMUNITY

847. 15 346 IT IS NOW COMMON PRACTICE IN ALBERTA AFTER PIPELINE OIL SPILLS TO BULLDOZE THE SURFACE (OIL-SATURATED) MATERIAL INTO PILES AND TO BURN THEM (OR ELSE TO ATTEMPT SURFACE BURNING OF OIL IN THE SPILL AREA WITHOUT BULLDOZING). WHEN THIS OCCURS IN FORESTED OR FOREST-MUSKEG AREAS, WHAT ARE THE SUCCESIONAL OPPORTUNITIES FOR EITHER ASSISTED OR NATURAL REVEGETATION ON THE BURNED OIL-SPILL AREAS? HUMAN DISTURBANCE,SUCCESSION,REPRODUCTION,PRESCRIBED FIRE,SOIL,MAN-CAUSED FIRE,SOIL STRUCTURE,SOIL-WATER RELATIONS

848. 15 347 THE CURRENT PHILOSOPHIES RELATING TO THE ROLE OF FIRE IN CONIFEROUS FORESTS ARE BASED ON: A) AN INCOMPLETE DESCRIPTION OF THE EARLIER HISTORY OF FIRE INCIDENCE, SIZE, INCIPIENT BEHAVIOR AND INTENSITY, B) AN INADEQUATE INVENTORY OF THE DYNAMIC FUEL COMPLEX EXISTING TODAY, AND C) A NON-OBJECTIVE ASSESSMENT OF THE IMPACT OF SUPPRESSION TECHNIQUES AND POLICIES. CAN WE BASE CRITICAL FUTURE FIRE MANAGEMENT DESIGNS ON REVIEWS OF PAST WORK WITH THE ABOVE LIMITATIONS? VALUE JUDGEMENT,HUMAN ECOLOGY

849. 15 348 DO SCORCHED AND BURNED TREES LEFT STANDING (AS OPPOSED TO BARE SNAGS) AFFECT THE RATE OR SUCCESS OF REGENERATION? FIRE EFFECTS,MORTALITY,HEAT EFFECTS,SMOKE EFFECTS,REPRODUCTION,CROWN BURN

850. 15 348 IF CONTROLLED BURNING IS TO BE CARRIED OUT, IS THERE ANY WAY TO ESTIMATE THE HEAT THAT THE SOIL WILL STAND TO JUDGE FOR REGENERATION AT A FUTURE DATE? HEAT EFFECTS,PRESCRIBED FIRE,SOIL,REPRODUCTION,FIRE EFFECTS

851. 15 348 IN AN OLD FIR STAND THE HEAT WILL BURST THE CONES TO RELEASE SEEDS FOR REGENERATION. HOW MUCH HEAT WILL THE SEED STAND BEFORE IT IS DESTROYED? SEED,HEAT EFFECTS,REPRODUCTION

852. 15 348 IN AREAS WHERE FIRE DESTROYS STANDING TREES BORDERING AREAS OF NATURAL OR MANIPULATED MEADOW (PARTICULARLY ALPINE AND SUB-ALPINE MEADOW), WHAT FACTORS DETERMINE THE RELATIVE EXTENT OF RE-FORESTATION?

CAN WE PREDICT THE POST-FIRE MEADOW EXTENT, DEGREE OF FOREST ENCROACHMENT? MOSAIC,ECOTONE,AREA SIZE,REPRODUCTION,FIRE EFFECTS,MOUNTAIN,COMPETITION

853. 15 348 IN SLASH BURNING, WHERE ONLY THE SMALLER COMPONENTS OF THE DEBRIS ARE CONSUMED, WHAT IS THE EFFECT ON THE LARGER COMPONENTS? FIRE EFFECTS,FUEL REDUCTION,PRESCRIBED FIRE,CHARCOAL,STEM

854. 15 348 IS FIRE EXCLUSION ENDANGERING THE DEVELOPMENT AND/OR MAINTENANCE OF UNGULATE RANGE(ELK,SHEEP) AND CONSEQUENTLY THE PRESENCE OF THESE ANIMALS? WILDLIFE,GAME ANIMAL,FIRE EXCLUSION,COMPETITION,HERBIVORY

855. 15 348 IS ONE CORRECT IN ASSUMING THAT LARGE STUMPS ARE MORE RESISTANT TO ROT FOR A NUMBER OF YEARS AFTER FIRE, AS THEY APPEAR TO BE? FIRE EFFECTS,DECOMPOSITION,STEM,ORGAN

856. 15 348 IS THERE A RELATIONSHIP BETWEEN ISOLATED PATCHES OF UNBURNED FOREST AND THE SOIL MOISTURE CONTENT AND HENCE VEGETATION TURGIDITY IN THOSE AREAS? FIRE EFFECTS,SOIL-WATER RELATIONS,FIRE BEHAVIOR,FIRE INTENSITY,MOSAIC

857. 15 348 WHAT IS THE RELATIONSHIP,IF ANY, BETWEEN SOIL DISTRIBUTION CHARACTERISTICS (INCLUDING SLOPE ASPECT, MORPHOLOGY, TEXTURE, MOISTURE, ETC.) AND THE RATE OF REGENERATION AFTER A BURN, AND THUS THE TOTAL AMOUNT OF ACCELERATION SOIL LOSS DUE TO EROSION? SOIL EROSION,SOIL STRUCTURE,SOIL,SOIL-WATER RELATIONS,TOPOGRAPHY,REPRODUCTION,FIRE EFFECTS

858. 15 350 HOW MUCH, FOR HOW LONG AND BY WHAT PROCESSES DO FIRES ALTER A) TOTAL WATER PRODUCTION, B) PEAK SNOWMELT RUNOFF, C) PEAK STREAM FLOWS, D) NUTRIENT LEVELS OF STREAMS, E) SEDIMENTATION AND F) EROSION FROM FORESTED WATERSHEDS? ECOSYSTEM,FIRE EFFECTS,STREAM,WATERSHED,NUTRIENTS,SOIL EROSION,CONIFEROUS FOREST

859. 15 350 WHAT ARE THE MICROMETEOROLOGICAL CHANGES IN RADIATION AND ADVECTION MICROCLIMATE AT EITHER SNOW OR SOIL SURFACE THAT RESULT FROM FIRES WHERE "NAKED" CANOPIES REMAIN COMPARED WITH TOTAL TIMBER HARVEST IN CLEAR CUTTING? MICROCLIMATE,SNOW,FIRE EFFECTS,SOIL,CROWN BURN,MANIPULATION COMPARISON

860. 15 350 WHAT IS THE RELATIVE DAMAGE CAUSED BY FIRE FIGHTING ACTIVITIES - SUCH AS LINE CLEARING AND "ROAD" BUILDING - ON EROSION AND SEDIMENTATION AS COMPARED TO THE DAMAGE CAUSED BY THE FIRE WITHOUT SUCH ACTIVITIES? HUMAN DISTURBANCE,SOIL EROSION,FIRE EFFECTS,FIRE EXCLUSION,MANIPULATION COMPARISON

861. 15 357 HOW CAN CONTROLLED FIRE MANIPULATION MAINTAIN ROUGH FESCUE (FESTUCA SCABRELLA) PRAIRIE ALONG THE SOUTHERN FRINGE OF THE BOREAL FOREST AREAS IN CANADA'S

WESTERN NATIONAL PARKS? GRASSLAND,CONIFEROUS FOREST,COMMUNITY,FIRE EFFECTS,PRESCRIBED FIRE,COMPETITION,WILDLIFE,PRODUCTIVITY

862. 15 357 HOW DOES ASPEN SUPPRESSION THROUGH CONTROLLED BURNING, EFFECT INVERTEBRATE AND VERTEBRATE POPULATIONS? DECIDUOUS FOREST,PRESCRIBED FIRE,ANIMALS,FIRE EFFECTS

863. 15 357 HOW DOES FIRE EXCLUSION IN CANADA'S WESTERN NATIONAL PARKS AFFECT PROCESSES WHICH WOULD HAVE TAKEN PLACE HAD MODERN MAN'S INFLUENCES BEEN LARGELY ABSENT? GENETIC RESPONSE,FIRE EXCLUSION

864. 15 364 HOW ARE THE NUTRITIONAL CHARACTERISTICS OF BROWSE SPECIES AFFECTED BY VARIOUS TYPES OF FIRES IN VARIOUS HABITAT TYPES - BOTH SHORT-TERM AND LONG-TERM? NUTRIENTS,SHRUB UNDERSTORY,WILDLIFE,GAME ANIMAL

865. 15 364 HOW DO PRESCRIBED FIRES COMPARE TO OTHER UNGULATE HABITAT MANIPULATION TECHNIQUES ON A COST-BENEFIT BASIS? WILDLIFE,GAME ANIMAL,PRESCRIBED FIRE,ECONOMIC EFFECTS,MANIPULATION COMPARISON

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897. 15 807 PROTECTION OF MOST OF OUR FORESTED LANDS FROM FIRE IS NECESSARY. HOWEVER, THE DEGREE OF PROTECTION SHOULD BE CORRELATED WITH THE RELATIVE LAND USE VALUES THAT WILL BE AFFECTED EITHER POSITIVELY OR NEGATIVELY BY FIRE. I DO NOT AGREE WITH SPENDING MASSIVE AMOUNTS OF MONEY ON AREAS WHERE A FIRE MAY DO LITTLE OR NO DAMAGE, INDEED MAY HAVE A POSITIVE EFFECT ON THE SITE. ECONOMIC EFFECTS,FIRE EFFECTS,FIRE EXCLUSION,VALUE JUDGEMENT

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900. 15 813 HOW FAST DOES A FIRE SPREAD IN AN ASPEN STAND UNDER EXTREME, HIGH, MODERATE AND LOW HAZARDS? FIRE BEHAVIOR,DECIDUOUS FOREST,FLAMMABILITY

901. 15 813 HOW HOT DOES A FIRE HAVE TO BE BEFORE ASPEN SUCKERING IS ELIMINATED? ROOTS,FIRE INTENSITY,DECIDUOUS FOREST,HEAT EFFECTS

902. 15 813 HOW SOON FOLLOWING A FIRE WILL CONIFEROUS (PINE OR WHITE SPRUCE) SPECIES GERMINATE IN AN ASPEN STAND? (ASSUMING A SEED SOURCE IS NEAR BY). CONIFEROUS FOREST,DECIDUOUS FOREST,SEED,REPRODUCTION,FIRE EFFECTS

903. 17 352 IS FIRE EXCLUSION LIKELY TO RESULT IN SIGNIFICANTLY HIGHER FIRE FREQUENCIES, RATES OF SPREAD AND INTENSITITES IN CONIFEROUS FORESTS? IF SO, IN WHICH FOREST TYPES AND HOW MUCH? FIRE EXCLUSION,FIRE FREQUENCY,FIRE BEHAVIOR

904. 17 352 UNDER A POLICY OF FIRE EXCLUSION, WHAT IS LIKELY TO BE THE EFFECT OF FUTURE TRENDS IN FOREST UTILIZATION AS THEY RELATE TO FUEL MANAGEMENT (AMOUNT, CONTINUITY, FLAMMABILITY, ETC.) AND GENERAL FIRE-FIGHTING EFFORT REQUIRED TO KEEP COSTS AND DAMAGES TO AN ACCEPTABLE LEVEL? GENERAL FIRE MANAGEMENT

905. 17 352 WHAT EFFECT MIGHT FIRE EXCLUSION HAVE ON RATE OF VEGETATIVE PRODUCTION AND AN INCREASE IN THE EXTENT OF PERMAFROST CONDITIONS IN NORTHERN LATITUDES? FIRE EXCLUSION,VEGETATION,PRODUCTIVITY,PERMAFROST

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907. 17 372 AFTER FIRES, MANY TALL SNAGS AND STUBS REMAIN, WHICH ARE OFTEN CUT DOWN AND LEFT TO ROT (MUCH LESS OFTEN "SALVAGED" AS MERCHANTABLE TIMBER). SUCH SNAGS, IF LEFT, MAY REPRESENT THE MOST ATTRACTIVE SITES FOR FEEDING AND NESTING OF HOLE-NESTING BIRDS AND MAMMALS (JUST AS OLD UTILITY POLES ARE MORE ATTRACTIVE THAN THE NEW ONES PUT UP IN THEIR PLACE). DO SUCH SNAGS REPRESENT A SIGNIFICANT FIRE HAZARD, BY ATTRACTING LIGHTNING OR WHATEVER, GENERALLY, OR ONLY ALONG RIDGES AND ON HILLS? AND DO THEY REPRESENT SIGNIFICANT FOCI FOR INSECT PESTS? IN FACT, IS THERE ADEQUATE JUSTIFICATION FOR CUTTING THEM, TO SET AGAINST THEIR VALUES TO WILDLIFE? SNAG,BIRD,LIGHTNING-CAUSED FIRE,INSECT

908. 17 372 FIRE IS NORMAL, AND VIRTUALLY INEVITABLE, IN MOST CONIFEROUS FORESTS. IN THE BOREAL FOREST PROPER, IT IS ALSO VIRTUALLY UNPREVENTABLE, OWING TO THE VAST AREAS INVOLVED. OVER LARGE AREAS IN ALBERTA AND WESTERN SASKATCHEWAN, SPRUCE AND/OR SPRUCE-FIR FORESTS ARE VIRTUALLY LACKING EXCEPT IN MUSKEG SITES, OWING TO REPEATED FIRES, AND SUCCESSIONAL FORESTS OF POPLARS, WITH OR WITHOUT SPRUCE UNDERSTORY, TAKE THEIR PLACE. DO WE NEED TO CONSIDER THIS A BAD THING? VALUE JUDGEMENT

909. 17 372 THE SOUTHERN BORDERS OF THE BOREAL FOREST, BOTH ALONG THE PRAIRIES AND ON THE INTER-MOUNTAIN PLATEAUS OF B.C., HAVE A PARKLAND PHYSIOGNOMY, WITH SCATTERED GROVES OF POPLARS AMID GRASSLAND. ARE THESE PARKLANDS A RESULT OF PRAIRIE FIRES BREAKING INTO THE CLOSED FOREST, OR ARE THEY MERELY ECOTONAL IN NATURE, CONDITIONED BY SOIL MOISTURE AND ALKALINITY?
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910. 17 372 WHILE THE POPLAR FORESTS WITHIN THE BOREAL FOREST ARE LARGELY OR ENTIRELY FIRE SUCCESSION, IS THIS ALSO TRUE FOR JACK PINE AND LODGEPOLE PINE STANDS? OR ARE THESE MAINLY CONDITIONED BY SANDY SOILS? OR BOTH? OR NEITHER? SUCCESSION,SOIL

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